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ABSTRACT

This study is a sequel to "Metalibrarianship." The previous work formulated a specific model for the philosophical interpretation of librarianship, and the present essay provides a wide-ranging reference to different views on the philosophy of librarianship. The review of philosophical viewpoints about library information science (LIS) is provided in two parts: samples of contributions to the intellectual foundations of library and information science are analyzed in part I, and then they are abstracted in part II. Selection of entries is based on their relevance to the theme of this study, and by the appearance of the works in "Library Literature" under the heading "Librarianship--Philosophical Aspects." Some entries are exceptionally long because their authors either: (1) are not well known to the general readership in philosophy of librarianship; (2) developed their own philosophical viewpoints; or (3) participated in a long dialogue about the philosophical subject. Only a few of the essays analyzed offer developed philosophical models of librarianship, since at present the philosophy of librarianship has many missing pieces. Most essays provide insights to only some aspects of LIS or restate this insight in a nonphilosophical mode. This compilation is by no means complete, and is offered as a preliminary draft to the students of librarianship to build on, by expanding past and present contributions, adding syntheses of new ideas into the nature of recorded data, information or knowledge, and by elucidating new roles of the profession. Three appendices constitute part III: philosophers cited in the compendium (part II), references to selected names cited in the compendium, and a 103-page bibliography. (MAS)

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# PHILOSOPHICAL ASPECTS
# OF
# LIBRARY INFORMATION SCIENCE
# IN RETROSPECT

by

JOSEPH Z. NITECKI

PRELIMINARY EDITION

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## PREFACE

The long history of librarianship is defined by three major revolutions: the invention of the alphabet, the development of printing, and the current information explosion. Throughout the ages librarians were responsible for preserving and providing access to the records of civilization, only recently reflecting on the intellectual meaning and cultural impact of their services on society.

This study is a sequel to Metalibrarianship, (Nitecki, J. Z., 1993). The previous work formulated a specific model for the philosophical interpretation of librarianship, and the present essay provides a wide-ranging reference to different views on the philosophy of librarianship.

The book was completed in the fall of 1994. It coincides with the fiftieth anniversary of the introduction of the subject heading "Librarianship-Philosophical Aspects" in Library Literature. Although throughout that period the number of essays on library philosophy was relatively small, interest in the subject is enduring.

A brief ALA survey made in 1994 (M.J.Lynch, M. J., and G. Hodges, 1994) indicated a sustained interest in the philosophy of librarianship among the ALA's members who ranked philosophy fifteenth among the areas of interest to them.

The review of philosophical viewpoints about library information science (LIS) is provided in two parts: Samples of contributions to the intellectual foundations of library and information science are analyzed in Part I and abstracted in Part II. The selection of entries is based on their relevance to the theme of this study. They include all authors listed by major reviewers of library philosophy, supplemented by most works listed in Library Literature under "Librarianship--Philosophical Aspects." Some of the summaries in this compilation may be out of context, since they are intended to illustrate the concepts applicable to this study, not to summarize the quoted essays themselves. Each entry is a sample of ideas to be studied in depth by consulting the original work.

Certain entries are longer than the average because their authors (a) are not well known to the general readership in philosophy of librarianship (e.g., works by D. Bergen), (b) developed their own philosophical viewpoints (e.g., Butler, Shera, Wright), or (c) participated in a long dialogue about the philosophical subject (e.g., J. Berry).

Only few of the essays analyzed offer more or less developed philosophical models of librarianship. Most provide insights to only some aspects of LIS, or they restate this insight in a non-philosophical mode. This is not surprising, since at present, the philosophy of librarianship resembles a big jigsaw puzzle, with some large pieces of the puzzle still missing.

The compilation itself is far from complete. It is offered as a preliminary draft to the students of librarianship to build on it, by expanding past and present contributions, by adding syntheses of new insights into the nature of recorded data, information, or knowledge, and by elucidating new roles of the profession, responsible for transferring recorded knowledge in any form and from any sources to their receivers.

Fall, 1994

# PART I: **Analyses of the philosophical aspects of Library Information Science (LIS).**

## 1.0 Introduction and methodology.

### 1.1 Focus of the study.

The focus of this study is on the philosophical aspects of library and information science as expressed in library literature. The study attempts to identify the basic elements of the discipline, their meaning, nature, and values.

The compendium in the second part of this essay contains references to a variety of philosophical aspects of librarianship, discussed from a number of different viewpoints. To provide some structure for the analyses of the whole spectrum of views expressed in it, a metalibrary approach is used as a model.

For a lack of a better name, the term "meta-librarianship" is used to describe the approach that synthesizes the essence of recorded messages communication, extended beyond the traditional paradigms of LIS. 'Meta' stands for an all-inclusive approach, and the word 'librarianship' is retained to indicate the historical origin of the emerging discipline.

Metalibrarianship can be briefly described as a study of metaphysical (ME), epistemological (EP), and valuational (VA) relationships between primary concepts in library and information science: the receiver of the communication, the carrier of the message, its content, and the relationships between them in the process of information transfer, analyzed at the conceptual (Co), contextual (Cx) and procedural levels (Pd).

Information transfer takes place between data, modified into information, which, when integrated into previously known relations, becomes knowledge. (For a full description of the metalibrary model see: J. Z. Nitecki, 1994.)

## 1.2 Methodology.

In this study the terms 'metaphysics' and 'epistemology' are used in a nontechnical, descriptive sense: metaphysical interpretations as the way people think about library and information science, epistemology as presuppositions about the basic attributes characterizing these concepts. The metaphysical approach focuses on the meaning of LIS, its definition. The epistemological approach addresses nature of the phenomena discussed. While both approaches are closely interrelated, here the focus is on the metaphorical essence, the necessary and essential innate ideas about LIS, and epistemological knowledge of actual existence of LIS. The former includes principles, ideas, and meaning; the latter refers to the origin, nature, and role of these concepts. The valuational approach relates to the judgment of relevant axiological, deontological and teleological values. (It includes but is not limited to ethics.)

The conceptual level focuses on the reality status (ideal, material, etc.) of the phenomena. The contextual level concentrates on the environment in which phenomena and relations are analyzed. The procedural level addresses the processes that change the status quo of phenomena or relations; it includes procedures (formal statements of the process).

The classification of individual topics varies; concepts that are not fully discussed are not completely subdivided. suggesting gaps in the debates on the philosophy of librarianship.

The table below summarizes some criteria used in this study.

| Recorded Knowledge (Levels) | PHILOSOPHICAL ASPECT | | |
|---|---|---|---|
| | Metaphysical (Meaning) (ME) | Epistemological ( Nature) (EP) | Valuational (Judgment) (VA) |
| Concept: essence 'What?' (Co) | Rationale: meaning | Organization; Nature of library related issues; Philosophical parameters | Service; axiological judgment; (good/bad) |
| Context: communication behavior 'WHY?' (Cx) | Individual; Society; principles culturally defined. e.g.: purpose | Social Environment; Its parameters: directions for change | Descriptive social values |
| Process: Pragmatic method: 'HOW?' (Pd) | Priorities; Laws & roles experimentally defined | Change; Validity; Functional differentiation | Acceptability; deontological judgment (right/wrong) |

The approach in this study is subjective in the selection of the authors and their views for inclusion in the compendium, and in the ways individual statements are classified. However, since the scope of the selection is very large (it includes most of the essays classified in Library Literature relevant to philosophical aspects of librarianship), and the classification itself is very broad, formulated in a framework of the previously defined metalibrary model, it is possible to draw conclusions, which, although statistically unverified, suggest the emergence of patterns in the application of the philosophical approach to the interpretation of the discipline.

The remaining sections of this part of the book provide an overview of the emerging philosophy of library information science by summarizing the citations listed in Part II of the book. The summaries are arranged in six groups illustrating: (1) a debate on the philosophy of the domain itself, (2) the development of the philosophical aspects of the discipline, (3) professional attitudes, (4) theoretical formulations of the interpretations, (5) the changing profile of the philosophical arguments, and (6) concluding reflections on the status of the philosophy of library information science and the differences between philosophy proper and the indirect philosophical aspects of the discipline. Some of the statements cited in this study express contradictory views on the same subjects, illustrating the conceptual differences of opinions.

## 2.0 The domain of Library Information Science (LIS).

### 2.1 Philosophy of the domain.

### 2.1.1 General comments.

In this section various comments on the philosophy of librarianship or its aspects are summarized and classified. The task is arduous because many authors do not follow the distinction between terms such as library (the physical entity), librarianship (the profession) or library science (the domain). They do not directly refer to the philosophical differentiation between the metaphysical, epistemological, or valuational aspects of their arguments, nor, of course, to the metalibrary distinction between conceptual, contextual, and procedural levels.

2.1.1.1 Need for a philosophy.

Formulation of the philosophy of the American public library was slow in coming, since the initial interest lay in developing specific library objectives and their implementation (Wilson, L. R., 1938). The lack of philosophical insight was evident in library literature which emphasized (a) differences rather than similarities among various issues, (b) purely empirical responses to problems rather than their anticipation, and (c) use of an inductive approach based on evidence and reductionism (Foskett, D. J., 1974a).

The absence of satisfactory philosophical analyses of the essence of librarianship is still a handicap (Wilson, Patrick, 1986): (1) the mission of the public library vacillates between educational and entertainment roles; (2) hazy ethics is applied in the selection policies and services (Roedde, W. A., 1957); (3) functions and practices of librarianship lack accepted principles (Khurshid, A., 1976); and (4) poorly defined bases for philosophy of librarianship weaken library social status (Slight, O., 1988), while consideration of library science as a service minimizes its professional role (Wei, A., 1979).

Although the traditional library can do without philosophy by using customs, routines, and guidelines. a progressive library cannot rely on such principles and must be directed by ideas, which form a philosophy of education (Houle. C. O., 1946). There is a need for a pragmatic philosophy of librarianship that would provide political control for library operations (Vagianos. L., 1973).

2.1.1.2 Historical background.

Modern American philosophy of librarianship began with the development of the sociology of librarianship at the University of Chicago Library School in early 1930s. The focus shifted from political emphases (1945-50), to the study of linguistic methods (1950-60), followed by application of mathematics (1960-70), Ranganathan's Five Laws, and social epistemology (1970-80) (Whitehead, J. M., 1980).

The process was influenced by (a) the Platonic idealism of Butler, Haines, Powel, Richardson, and Sayers: (b) the Aristotelian sociological research and methodology of Shera and Shores: (c) the professionalism of Melvin Dewey; (d) the administrative viewpoints of Naude, Durie, Panizzi. and Putnam; (e) the educational concerns of Foskett, Orr and Botasso: (f) classificatory studies made by Ranganathan: (g) the individualism of Broadfield. and (h) metaphysical models generated by Wright and Nitecki (McCrimmon, B.. 1994). In the last decade, the fast-developing discipline of information science expanded the philosophical scope of librarianship notably.

The views of 19th century liberal, progressive philosophy were represented by L. R. McColvin, Broadfield, and L. Clark, who considered the library as a secular missionary institution contributing to the education and enlightenment of selected patrons, not mass culture (Benge, R. C., 1957). The philosophy was also influenced by D. Waples's pragmatic empiricism, B. Berelson's behavioral approach, and P. Butler's humanistic viewpoints (Terbille, Ch., J., 1992).

In other countries the history of library philosophy can be understood only in the context of their political system, such as the Marxist ideological definition of librarianship in the old Soviet system (Rovelstad, M., 1974). In that ideology, library philosophy was determined by political motives and objectives, and it was subordinated to ideological and economic needs of the totalitarian system (Abramov, K. I. & V. V. Skvortsov, 1978).

### 2.1.1.3 Perceptions of library philosophy.

Writings in the philosophy of librarianship are influenced directly or indirectly by major philosophical schools. Plato and Socrates believed in the paternalistic absolute-value viewpoint. The importance of Thomism to individuals lies in stressing self-mastery and self-fulfillment. Existential philosophy focuses on personality of individuals. Pragmatism maintains that everything is relative to the nature of the society. Behaviorism is deterministic vis-a-vis human behavior. Logical positivism is an empirical study of the limitations of language. Analytical philosophy focuses on the relativism of human conduct. Scientific humanists maintain that science is an instrument of progress, and humanism a source of inspiration. Dialectical materialism is preferred for scientific and technical approaches (Staveley, R., 1964).

George Ticknow perceived the philosophy of librarianship as based on the belief that (a) each person is perfectible, (b) books are means toward intellectual perfection, and (c) the library should provide books free to educate common people in the image of the best person and to supply books for elite patrons. Carnegie was a rigid moralist, expecting the library to have an indirect impact on order, stability, and economic growth of the society (Harris, M., 1973). Georg Leyh's philosophy of librarianship was based on humanistic and scholarly purposes free of ideological or practical influences (Dosa, M. L., 1974). The concept of a philosophy of librarianship itself is sometimes considered synonymous with the definition of _library_ itself (Foster, M., 1979).

Although the philosophy of librarianship expresses social goals as means toward social ends, it must also conform with each individual's own philosophy of life. Each patron is a unique individual interpreting for himself the library materials (Broadfield, A., 1949). In some cases, the personal philosophy of librarianship may also reflect librarians' desire for respectability by glorifying their custodial function and their need for professional identity by falsely fusing library objectives with its attributes (Peirce, P., 1951).

Three views illustrate the outlook on the philosophy of librarianship: (1) R. H. Hayes feels that information science will become a theoretical foundation of librarianship, based on the notion that the records of bibliographical resources constitute a total system; (2) R. H. Parker sees two conflicts in philosophy created by a preference for direct access to books and a consideration of bibliographical guides as the best ways of accessing collections, both being the result of inadequacy of bibliographic control; and (3) G. W. King maintains that the complexity of the structural nature of library information reflects the complexity of the language (Hayes, R. N. *et al.*, 1964).

(a) What the library philosophy ought to be.

A philosophy of librarianship should focus on defining the purposes of the discipline. One of them ought to be the promotion of the unity of knowledge, minimizing the science-humanism antagonism by public-library focus on general culture and by special libraries' concentration on science-related collections and services (Foskett, D. J., 1964). It should be based on professional practice and ethics which do not conflict with personal philosophy of librarians (Haines, H. E., 1946; Staveley, R., 1964). As a philosophy of service, it should relate to the control of information utility and social implications of value-oriented activities (Horn, S., 1973), and provide direction, purpose, and commitment to national cooperative networks, equal access, protection of the rights of the authors and publishers, readers' privacy, intellectual freedom, and maximum political autonomy, notwithstanding necessary governmental support (National Commission on Library and Information Science, 1974). The ideology of librarianship must be replaced by a philosophy of action aiming at getting additional financial support. Philanthropy has ended, and librarians cannot depend entirely on support by others (Orman, O., 1935).

A philosophy of librarianship should also (a) be inclusive and pluralistic, not expected to choose between the technological focus on change and the humanistic focus on knowledge, accommodating instead both approaches (Rosenblum, J., 1981); (b) reexamine library functions in terms of changing patrons need (Carter, D., 1981); (c) formulate metaphysical belief about realities dealt with by distinguishing between ideas (formal), data (physical), factual knowledge about data, and formal knowledge about ideas (Wright, H. C., 1982a); (d) reflect metaphysical assumptions of a librarian *qua* librarian that extend beyond himself to servicing individuals' and society's professional needs (Ortega's mission) (McConnell, J. Ch., 1992); (e) mirror and guide the activities developed by M. Dewey's practice (Wilson, L. R., 1936), (f) integrate various tasks within and between libraries by identifying common denominators (Iben, I., 1936), (g) explain the significance of the book and define the library in terms of human behavior, the librarian's loyalty to truth, justice, and beauty (Butler, P., 1945); and (h) relate to community needs and standards of performance, avoiding overemphasis of library practice (Carnovsky, L. & E. W. McDiarmid, 1934).

The base for the philosophy should be William James's pragmatism, promoting workable principles that would produce results based on moral, intellectual, and logical approaches (Kerr, W., 1920), and on Gandhi's philosophy of a pragmatic democracy that entails librarians' involvement in providing free library services to all (Mittal, R. L., 1969).

A new discipline ('studiology)' ought to be developed: a kind of general science concentrating on the study itself, based on information needed by individual disciplines and explaining what they study (Wright, H. C., 1975, 1978). It ought to be a scholarly domain with a unique focus on relations between social needs for information and printed knowledge. Such a discipline can be established only by developing a philosophy that would define areas of human experience related to librarianship, and by legitimating its user-driven system designated to meet patrons' cognitive needs (Wilkinson, N. J., 1983).

(b) The functions of library philosophy.

In general, philosophy is a search for underlying causes and principles of reality; it is useful in making a choice between alternatives (Downs, M. W., 1969).

In librarianship, it interrelates the scopes of library and information science in a form of a communication model, by identifying several relations between the source-medium-language-purpose and the receiver of the communicated message (Pratt, A. D., 1982). It provides interpretation, which relates abstract knowledge through physical carriers of recorded knowledge to library patrons (Wright, H. C., 1985b).

Expressed as action, library philosophy can be instrumental in the development of patrons' perceptions and library responses to them (Colson, J. C., 1983). The philosophical framework for bibliographic instruction incorporates metaphysical and metaphorical aspects of the discipline (Engle, M. O., 1986).

However, library philosophy is not universally accepted because of its overemphasis on the library as an institution (Czopek, P., 1984). The conflict between theory and practice slows the formulation of the philosophical synthesis of librarianship.

Four approaches to philosophy of librarianship are identified: (1) actional, discarding theory in favor of practice, (2) organismic, subordinating techniques to principles, (3) naturalistic, maintaining that principles evolve from library practice into theory, and (4) reflexive, stressing changing functions with changing social conditions of libraries (Rao, R. K., 1961). Two competing practical approaches are (1) collection-preservation--oriented storehouse philosophy focusing on developing resources, and (2) service-communication--oriented philosophy stressing patrons' needs in the use of resources (Miller, G., 1981).

### 2.1.1.4 The critique of the philosophical approach.

Library and Information Science lack a universally accepted philosophy, its 'building blocks' and methodology (Whitehead, J. M., 1980). It is criticized for focusing on linguistic analyses rather than on everyday problems (Duckett, R. J., 1986).

Doubts about the existence of a library philosophy are expressed in a number of ways. (a) Some writers claim that philosophy cannot exist for secondary activities, such as those performed in libraries. The present philosophy of librarianship focuses instead on purposes, ideals, and functions, providing no solution to library problems. An empirical and theoretical approach should replace the philosophical one (Emery, R., 1971). (b) Others maintain that there is no autonomous philosophy of librarianship, only a philosophy of life as it applies to librarianship; there are, however, principles of quality that determine library support of its community's needs, culture, and spiritual standards. Philosophical ideas must be translated into political action, subject to review by public opinion (Haugh, W. S., 1953). (c) Still others argue that although such a philosophy can exist, it is not found anywhere, and there is no one philosopher of librarianship in America today (Wright, H. C., 1977).

Those who accept the existence of library philosophy criticize it for a variety of reasons. (1) It has little meaning because of its inclusiveness, value-obsolescence, and reliance on other disciplines (Harley, J., 1954). (2) The all-embracing scope of librarianship makes its philosophy too vast to be compressed into one statement that would reflect a social philosophy of community (Chakravarty, N. C., 1959). (3) Public library philosophy is undemocratic in that it tries to do everything for its patrons, neutralizing their individuality. Social conscience reinforces vested interest against individual interest; it can be avoided by not thinking in terms of "current social realities" (Griffin, B., 1973). (4) When chosen by personal inclination, the philosophy becomes an ideology (Carter, G. A., 1948). (5) The American Library Association is not interested in the philosophy of librarianship, except for ethical issues stressing quality of service, censorship, privacy of information, equitable personnel policies, and avoidance of conflict of interest -- but with no means of enforcing any of these concerns (ALA, 1930, 1939, 1947, 1975).

And finally, the revisionistic approach to philosophy of librarianship itself is criticized for its anti-intuitionism and anti-traditionalism, partisanship, and ideological viewpoint (Harwell, R., & R. Michener, 1974).

## 2.2 Metaphysical definitions of the philosophy of librarianship.

Philosophy of librarianship is defined in terms of proximate (client-served) and ultimate (institution - or religion-centered) ends (Temple, P., 1949). It becomes metascience, similarly to philosophy proper, by addressing the whole knowledge and culture (not the nature of reality, but the ideas about it), by focusing not on substance and content of knowledge but on its form, structure, order, and interrelation. Both, philosophers and philosophers of librarianship, serve as middlemen for other disciplines by dealing with conceptual issues of these disciplines (Kaplan, A., 1964), issues based not on the physics of library practice but on the metaphysical realities of librarianship itself, in which the concept of human mind is considered as the source and subject matter of librarianship (Wright, H. C., 1978b).

The philosophy is formulated in terms of laws of the General Systems Theory, developed as a communication system of collective memory (Orr, J. M., 1977). It focuses (a) on the objectives, the 'why-what' of the library ideals; (b) on society (Butler); (c) on individuals (Broadfield); (d) on democracy (Jewett); and (e) on profession (Danton) (Marco, G. A., 1966). It is defined in terms of various principles of librarianship, created by society for storing and disseminating knowledge (Thompson, J., 1977).

### 2.2.1 What it is.

Philosophy of librarianship is an inquiry into the nature, meaning, purposes, and functions of librarianship. It provides answers to questions about the essence of the library (connecting readers with books), the meaning of a generic book (as recorded knowledge), the nature of its patrons (storing information in their memories), and knowledge (a metaphysical reality in patrons' minds). Nowadays, the above-named concepts are restated in terms of energy: books as a storage of ideas, knowledge as a power possessing intellectual energy, and learning interpreted as increase of person's energy (Richardson, E. C., 1927).

To some writers, philosophy has no other meaning than as a study of the theory and principles of librarianship, providing definitions, statements of purpose (teaching-research-entertainment), aims, and relations to other disciplines (Irwin, R., 1949, 1961).

Philosophy of librarianship is a pursuit of truth, principles guiding action, and theories explaining reality: what is known, how it is put to work, and for what purpose it exists (Benge, R. C., 1957). It is (a) a frame of reference delineating the discipline's scope and unity by explaining its purpose, functions, and occupational ideals (Becker, J., 1978); and (b) a study of human inference, based on the philosophical focus on knowledge about knowledge itself, as distinguished from the scientific focus on phenomena manifesting knowledge (Wright, H. C., 1985).

It will provide answers to important questions such as: what are the definitions of information and knowledge, how does meaning emerge from its form, and what kind of architecture is needed for building a system that can extract and operate on information content (Brown, J. S., 1986).

A distinction is also made among (a) popular, inspirational philosophies, (b) academic, analytic philosophies, (c) sociological viewpoints formulated in terms of scientific methodology, and (d) cultural, political, and economic factors in providing access to reading material for intellectual development of patrons through reading (McCrimmon, B., 1975).

2.2.2 Applications of library philosophy.

Library philosophy provides guidance in collection development (Harley, J., 1953), operational continuity (Foskett, D. J., 1962), and intellectual stimulation in critical thinking (Martin, L. K., 1964); it also stresses self-development, freedom, and democracy (Bawa, N. S., 1965) and offers a synthesis: a communality of opinion concerning the nature of librarianship *qua* librarianship (Shera, J. H., 1976a).

It addresses the 'why' of library purposes that vary with each library. Common to all libraries is (a) the focus on the individual (in philosophy of education) and on society (in social philosophy) (Desrochers, E. E., 1961); and (b) the social processes to educate, inform, and entertain by providing tools and formulating general concepts that classify library purposes, validate its approaches, add meaning to library operations, and clarify librarians' professional status (Mukherjee, A. K., 1966).

It questions the reasons for book collections and principles that guide creation, preservation, and transmission of knowledge. These issues are answered by the objectives, criteria, and techniques set up by library administrators. However, the common denominators for different libraries are diminishing (Lock, R. N., 1973).

2.2.3 The scope of library philosophy.

Philosophy of librarianship is based on the principle that all theoretical thoughts proceed from basic motives which exist in pre-theoretical thoughts (Panjegrouw, J. G., 1988) and are derived from form, not matter, philosophy (Wright, H. C., 1984).

It stresses the triadic library role: as a communicational transferor of recorded knowledge, as an educational instructor of its use (Christ, J. M., 1972), and as a provider of information services needed by patrons for their interaction with the marketplace (Nader, R., 1974).

Such a philosophy includes definition of aims, delineates relationships with other disciplines, and serves as the scientific base for library theory (Berthold, A., 1933). It identifies, analyzes, and appraises basic assumptions and relates them to larger whole. The philosophy must be satisfactory to librarians, be consistent with social philosophy of its community, promote development of individuals', the library's and society's potential, and subject itself to self-criticism and adjustment to the political system of its society (Kolitsch, M., 1945).

Philosophy of the public library relates to human nature and individual personalities that determine readers' needs, formed by biological, environmental, and psychogenetic forces that influence changing societal values (Ranganathan, S. R., 1948). It incorporates basic assumptions that are identified, analyzed, appraised, and related to the practice of the profession and to larger aspects of life (Chatterjee, A., 1964).

Relationships between philosophy, science, and librarianship are summarized as follow: (a) whereas philosophy studies general principles, applied philosophy focuses on principles of particular discipline, providing an overview and balance for diversity of individual outlooks; (b) science is deterministic and provides an inventory of records and their uniformity; (c) librarianship is both art and science, utilizing scientific management and providing free access to information (Ranganathan, S. R., 1951).

## 2.3 Epistemological nature of library philosophy.

### 2.3.1 Nature of its definitions.

Epistemological explanation of knowledge of reality is introspective. There is a need for the intellectual interface among the intellectual structure of knowledge, librarians, and technology facilitating access to knowledge (Wright, H. C., 1982a).

Philosophy of librarianship is an applied social philosophy explaining aims, functions, and reasons for library existence (Lane, R. Mc., 1935). It is concerned not exclusively with diffusion of knowledge, but also with intellectual improvement of those library patrons who need it most but have th fewest opportunities to get it. Its practical application constitutes sociology of knowledge (Wellard, J. H., 1940). It is a practical philosophy defined in terms of its own operations; it relates to educational, informational and esthetic objectives based on research; and it is adjusted to the multi-purposes of the library clientele (Houle, C. O., 1946a).

### 2.3.2 Characteristics of its definitions.

Philosophy of librarianship defines its own principles (Danton, J. P., 1934). They vary with libraries, each operating under different circumstances, each affected by its librarians' own philosophy, each providing its own solutions to the local problems (Reddy, K. S., 1970). The philosophical contribution to the definition of the library profession is that it gives meaning to library activities (Asheim, L., 1953) in terms of its role in a community (Carnovsky, L., & E. W. McDiarmid, 1934).

In the past, philosophy of librarianship was based on the content of the collection. It was book-centered rather than library-centered, facilitating reader-book mediation rather than a direct dissemination of ideas (Miller, R. A., 1936).

Major principles of the American philosophy of librarianship are (a) an abstract notion of society, stressing its permissive pluralism (Rovestad, M., 1976), (b) W. James's pragmatism, a process that recognizes the moral and intellectual environment of patrons (Kerr, W., 1920), and (c) a natural-rights philosophy that shaped democratic ideals and value principles (King, D. W. & others, 1991).

## 2.4. Valuational assertions about philosophy of librarianship.

### 2.4.1 Definitions of library values.

All humans have values (Peterson, K. G., 1983). Potential value is an actual value multiplied by the probability of being used; it is realized through means-ends processes into one of the following categories: (1) economic (adequate means), (2) scientific (relating means to ends), (3) political (conflict-centered), and (4) esthetic (creating new ends). Relevance involves information that is wanted, needed, provided, timely, reliable, valid, adequate, and wide-ranging (Mason, R. O., 1987).

Definitions of ethical value-concepts are compatible only with the root metaphors of corresponding metaphysical hypotheses; hence there can be no one, universal definition of ethical concepts such as 'good' (Nitecki, J. Z., 1959).

Values depend on the relationships between their pragmatic interpretation in a theoretical context (as metainformation) and their actual social environment (Gomez, M. N. G., 1990). However, the shifting values and lack of uniformity in librarianship make their identification difficult (Getzel, J. W., 1957).

Values are divided into (1) professional, such as a commitment to service and reading, neutrality, and political freedom, (2) general values of cooperation, tolerance, etc., (3) personal, humanistic, conservative, idealistic, or esthetic values, and (4) rival values such as bureaucratic rigidity, anti-intellectual mediocrity, or nihilistic cynicism (Finks, L. W., 1989). They may be considered in terms of (1) their economic aspect in a market-place, (2) their metaphysical quality, (3) the effects of their production costs, and (4) the function of their utility (Cooney, J. P., 1987).

Professional ethics defines roles of different types of libraries and offers a creed and code of behavior. It aims at a concept of an ideal librarian, who believes in the value of librarianship as a keeper of books selected for supporting, learning, and promoting culture; and it accepts professional neutrality, opposes dogmatism, and supports basic freedoms (Mukherjee, A. K., 1966).

The philosophy of librarianship can be either a value-laden system of motivating beliefs based on principles and beliefs, or a theoretical, value-free system (Buckland, M. K., 1988).

The trend to quantify human behavior is based on a wrong assumption that reality can only be explained by data, thus failing to distinguish between numerical description and a non-statistical explanation of reality (Odi, A., 1982). Reading behavior, for example, is influenced by readers' personal values (Becker, B. W. & P. E. Connor, 1982).

### 2.4.2 Valuational limits.

#### 2.4.2.1 General comments.

Knowledge consists of objective truth and subjective persuasiveness; truth reflects language-reality correspondence, beauty refers to the enjoyable aspects of knowledge, goodness to its desirability, freedom depends on the kinds of desirable goods, and justice is interpreted as an opposite to unjust values (Money, Ch., P., 1984).

The concepts of quality (capability) and value (beneficial effect) of library services do not necessarily complement each other. In a narrow sense, the focus is on quality, but in a broad sense it is on the utility of library services (Buckland, M., 1982).

Selection of material in collection development is based on the philosophical concept of absolute value used as a comparison and standard, learned from the values already preserved in the collection (Harley, J., 1953).

A conflict between the quality of the collection (based on librarians' value-judgment) and its quantity (demanded by the public) results in a mediocre service and useless duplication of collections (Bishop, W. W., 1919).

2.4.2.2 Ethical issues.

Morality and ethics are not synonymous. According to Aristotle, ethics can be a science or morality. Russell defined ethics as "general principles that help to determine rules of conduct" but do not provide actual rules. Moore formulated the naturalistic fallacy of deducing moral categories from empirical or metaphysical concepts. 'Ought' does not follow from 'is', hence ethics constantly searches for the foundation of morality. We start with intuition of right conduct and combine it with knowledge by induction from sense-perception (Aristotle). The danger is in casuistry and dogmatic interpretation of morality (Capuro, R., 1985).

The code of ethics defines the professional status of librarianship by prescribing specialized knowledge, ethical standards, self-governance, rights and privileges, contributions to society, and intellectual freedom. Broadly defined, it relates to limited judgment in selection of resources, giving patrons what they want. Narrowly defined, it refers to giving them what they should have; it is an arbitrary and subjective judgment. The solution to the dilemma is in focusing on material that enriches human life (Stichler, R. N., 1992).

Thus, a code of ethics is a mixture of general principles and definite rules. Moral truths do not change, but their applications depend on environmental changes (Anderson, J. F., 1969). The value of the code itself is doubtful, since good people do not need it and bad people will not follow it.

Ethics in research concentrates not only on information but also on its use. In teaching, it avoids biased presentations, and in information science it considers information as a social power, addressing abuse of facilities, confidentiality, influence of brokers, and vendors. Ethical library principles in the dissemination of information include accessibility and completeness.

### 2.4.2.3 Critical comments about philosophy of librarianship.

Before any philosophy of librarianship is formulated, the following issues should be clarified: (1) relationships between library and information centers, (2) professional librarians and library educational roles, and (3) definition of the library clientele, the roles of books, and different types of libraries (Mumford L. Q., 1966).

Today, the term 'elitism' means anti-democratic bias, male chauvinism, judgmental and/or prejudicial values. In the past it referred to dedication to scholarship. Anti-intellectualism is seen in criticizm of elitist, bookish librarians, dedicated to controversial issues. Intellectualism is rejected as an unnecessary or even detrimental attitude in library practice. However, intellectuals have the capacity for discriminating judgment. Anti-intellectuals discriminate against that very capacity (Isaacson, D., 1982).

Hypocrisy is an intentionally deceptive interpretation of ethical principles of librarianship, deceit which interferes with the mission to provide objective dissemination of knowledge (Nitecki, J. Z., 1983).

Skepticism implies a futility in the pursuit of truth; similarly, the abstract notion of a collection that represents all views is in conflict with common sense (Jackson, S. L., 1971).

Discriminating judgment relating to absolute values may be in conflict with value-free intellectual freedom. Libraries often give people what they don't want, replacing traditional moral value by meaningless facts (Marshall, P., 1976).

Librarianship is defined in terms of a variety of basic concepts and relations. The philosophical approach defines librarianship as metascience (Kaplan), as epistemology of knowledge (Richardson), as social epistemology (Shera), as humanistic immaterialism (H. C.Wright), as human linguistics (Yngwe), as a discipline stressing the values of reading (Sayers, Haines, Powell), as a discipline embodied in a metaphorical model (J. Z. Nitecki), as Five Laws (Ranganathan), or as esthetic (Bostwick) and ethical neutrality (McColvin, Foskett). It is a metaphysical rather than a scientific domain (McInnis, R. G., 1982), a science of the mind.

The concept of librarianship should relate to the formal realities of the ideational order, not to the physical realities of statistical order (Wright, H. C., 1981).

In the sociological view, librarianship is considered a social institution in transition, reflecting the philosophy of society (Kolitsch), emphasizing social responsibilities (Berninghausen) and book selection (Putnam, Goldhor) (Egan, M., 1955).

The political view aims at reconciliation of group conflict (Dana) and mediation between group interests (J. Z. Nitecki). Religious views express roles of Christian librarians (Burke).

Professional philosophy emphasized the uniqueness of librarianship (Butler, Dana), exhibiting tolerance and proficiency on one hand (S. W. Foss) and policing the effectiveness of books on another (Ortega).

## 2.5 Librarians, Librarianship and Libraries.

### 2.5.1 Metaphysical definitions.

ME-Co: Meaning of the concepts.

(a) Librarians deal with the 'aboutness' of documents' content, not its truth or consistency. 'Aboutness' entails the knowledge of what is needed by what type of readers, and is influenced by these readers' bibliographic ignorance of the subject sought (Fairthorne, R. A., 1973).

Librarians are defined (1) as generalists without specialization, but with a general understanding of the scope of knowledge, which enables coordination of the work of specialists (Kaser, D., 1975), (2) as generalists specializing in searching the totality of recorded knowledge (Lekai, E. A., 1977), (3) as bibliographical experts and managers, custodians of immediately unavailable resources (Bryson, L., 1937), or (4) as teachers, selecting reading material and encouraging its use (Dewey, M., 1876).

(b) The essence of librarianship is described in terms of the reading processes that provide the understanding of the causes, roles, relations, and meanings of the universe (MacLeish, A., 1972). It is a process of fulfilling patrons' needs (Stieg, M. F., 1992), thus reducing entropy (Penland, P. R., 1971). The psychological approach stressed primacy of the individual (Broadfield, Foskett, L. Martin), considering a library as a social institution (M. Dewey).

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Professional philosophy emphasized uniqueness the of librarianship (Butler, Dana), exhibiting tolerance and proficiency on one hand (S. W. Foss) and policing the effectiveness of books on another (Ortega).

Librarianship is a social process based on the librarians' service, devotion, and belief in the value of the library to its public (Collison, R. L., 1958). It assists in the conversion of facts into logic, free will into a purpose, conscience into decision-making, historical experience into a design of a sane world, and individual morality into group ethics (Cousins, N., 1959).

Librarianship is not considered either a place or an end in itself, but a means for accomplishing its goals (White, H. S., 1978 & Baker, N., 1994). It provides conditions for relating, organizing, and using recorded knowledge (Gates, J. K., 1976). Its main objective is to assist the patron in educational processes by providing needed facilities and resources (Anwar, M., 1967). Its mission is to bring together the right book, with the right person at the least cost (not to get together the best books for the largest audience at any cost) (Roden, C. B., 1923). That mission is perceived by some writers as a bibliothecal priesthood with moral responsibility for the future of the society (Kaser, D., 1971).

(c) Library service is defined as a purposive use of resources aimed at attainment of desired changes (Newenan, P. A., 1985). Library work consists of librarycraft and intellectual inventiveness (Jordan, P., 1942), and a librarian is seen as a keeper of books, responsible for their physical format and intellectual content (Macleish, A., 1940a).

Library organization and collections serve as textbooks for what is termed 'knowledgeableness and informationability'. The library is an organized collection of carriers of knowledge; it locates and indicates interrelationships between the items in the collection (Michaels, C. D. C. L., 1985).

The library is an active, democratic organization, characterized (a) by a focus on people and tacit knowledge (Natoli, J. P., 1982), about knowledge (McGarry, K. J., 1975); (b) by relating physical symbols and their ideative referents (Wright, H., C., 1986); and (c) by promoting the basic right to read any material without governmental intervention (Stevenson, G., 1977). Its interdisciplinarity is characterized by common goals and activities, functions, research, subject knowledge, and technology (Rawski, C. H., 1973b), focusing on the content, structure and theory of knowledge (Mohamed, O., 1975).

ME-Cx: Meaning of the library environment.

World librarianship is described in terms of its environmental appropriateness, interdependence, and convergence (Krieg, C. J., 1970). It is rooted in the cultural, sociological, political, and economic conditions of its society (Predeck, A., 1939); it is considered a social investment in the democratic countries and a cultural center in the communist block (Williams, V., 1984).

### 2.5.2 Epistemological nature of the domain.

EP-Co: Characteristics of librarians, librarianship, and libraries

(a) Librarians.

Librarians are characterized by their function. (1) As managers they administer libraries hierarchically, not by subjects. Departmentalization by function was necessary in the era of large, single catalog, but the introduction of computers requires change from functional, hierarchical relationships to a matrix-style organization, a managerial network that stresses goals and, in small libraries, a collegial management style (Altmann, A. E., 1988). (2) Librarians' functions are defined by triadic relationships between practice, education, and research (Okko, M., 1985), and by (3) an interaction between the old, bureaucratic and a new, patron-oriented approach.

There is a connection between knowledge advancement and the librarian's analyses of knowledge growth; it is reflected in library collections, which strike balance between different domains, in correcting wrong retrieval strategies, and in stimulating future research by acquiring, indexing, and coordinating resources for the library scholarly community (Lyle, G. R., 1963).

Librarians deal with the text either as a carrier of concept, or as an object with marks on it, but seldom as both at the same time (Fairthorne, R. A., 1961).

(b) Librarianship.

The definitions of librarianship reflect (a) differences between the humanistic libraries' focus on general issues and scientific libraries' restricted meaning (Jelin, V., 1970), and (b) cultural settings. For example, we have (1) the difference between the pre-1939 traditional and post-1945 progressive philosophy of librarianship in Germany (Stieg, M. F., 1986), (2) the conceptual paradoxes in Polish librarianship which were created by cultural incentives to expand library services and constrained by state politics and by the contrast between biblio-psychological and socio- educational interpretations of library roles (Gorecki, D., 1976).

Behavioral aspects of librarianship relate to the way librarians think, feel, behave, and interact with patrons (Fine, S., 1984). The conceptual framework for the behavioral demeanor of librarians consists of understanding attitudes and common - sense interpretations of relations in communication. In interpreting their behavioral skills, the descriptive rather than a prescriptive approach should be used (DeHart, F. E., 1979), and services should satisfy both functions (Bishop, D., 1976).

However, the importance of the concept of librarianship is also de-emphasized, since the discipline is rhetorical rather than logical, patron-driven and practice-oriented, borrowing abstract concepts from other disciplines (Sharp, J., 1981).

The focus in librarianship should change from the practical 'how' to serve to the understanding of the needs for the service (O'Halloran, C., 1967).

The terms 'librarianship' and 'philosophy of librarianship' are inexact and should be replaced by terms such as 'library theory', 'library thought', or 'library science' (Vleeshauwer, H. J., 1960).

(c) Library.

All libraries have similar social goals, defined in terms of their patrons' needs (Swanson, D. R., 1964); they differ in the purposes for arranging and interpreting their collections (Randall, W. M., 1940; Benge, R. C., 1957), restated as Gestalt functions (Grazziano, E. E., 1975). Library credo stresses the importance of patrons' needs, accurate processes, and proper environment (Wright, W. W., 1955).

A distinction is made between (a) library substance and its instruments, and (b) physical datum and metaphysical referent (ideas). Symbolic data are interpreted by mind intrinsically in terms of their referents; science interprets them extrinsically, in terms of their nature (Wright, H. C., 1979). The library is seen as a prepackager of information for ready access. The perfect library meets all needs of all patrons (Asworth, W., 1979).

Primary library objectives determine its character and function (McMahon, A. M. & J. Tydeman, 1978). The discipline focuses on book socialization, support of democracy, and the status quo (Ditzion, S., 1947); it is concerned primarily with knowledge, not information, and its interrelationships between books and their readers (Neill, S., 1985).

The tendency to uniformity in library organization creates a conceptual problem, since each library serves different clienteles. Diversity is needed to serve individual patrons more effectively; unity is necessary to interrelate all agencies in advancing learning.

Library functions are political (Freiser, L. H., 1988), and their purposes relate to Malinowski's functionalism; librarians, as bookmen, mediate between books and readers (Vickery, B. C.,

1970) and bridge the gap between sciences and humanities by offering scientists non-scientific reading material in public libraries (Foskett, D. J., 1964).

The library is the only social agency devoted solely to the collection, preservation, and accessibility of records (Gates, J. K., 1976). It is the most logical place to bring together the library and its patrons by offering: (1) a large diverse collection of databases, (2) savings to patrons over purchasing personal copies, (3) the services of an information specialist for assistance, consultation, and instruction in the use of systems, and (4) a reference librarian in an enhanced role as instructor and facilitator in developing individual search strategies (Rice, J., 1986).

Patrons must participate in determining library goals (Clift, V. A., 1970), since it is an individual patron, not the librarian, who initiates and defines library services in terms of his or her own interest (Vice, K., 1988).

EP-Cx: Characteristics of the environment.

Environment shapes us and we the environment (Greco, M., 1967). Library ecology includes cultural and behavioral understanding of social setting (Bergen, D. P., 1963a). Librarianship should be considered in the context of its specialization and salesmanship (Drake, M. A., 1977), and reference services examined in the context of the total library environment (Vavrek, B. F., 1968).

The history of librarianship relates to the geography and environment of the library (Brewer, J. G., 1970) and can be revisionistic, conservative, or professional (Harris, M., 1977). It provides perspectives on the role of libraries in the past (Irwing, R., 1958), as illustrated by the significant impact of Philadelphia's Library Company on the American society and similar social movements that were instrumental in developing public school and library systems (Fain, E., 1978). This is a recurring circle of moral commitments and bureaucratic processes. Revisionistic interpretation criticizes the American public library for its "uplift" theory (Harris, M., 1973) by considering founders of the library movement to be elitists, contrary to a Jeffersonian democracy that defends people against aristocracy by advocating reading (Harris, M., 1976b). The revisionistic criticism is rejected by some writers as overlooking the context of the times (Dain, P., 1975).

The modern library emerged in 1876 as a professional occupation. Scholarly bibliographers study books as complex intellectual artifacts; librarians focus on functions and operations; documentalists aim at a universal index to all documents; library science started in the 1920s concentrating on standard scholarship and procedures borrowed from social sciences methodology. In the 1950s the emphasis in library history shifted from fact-gathering about librarianship to the study of its environment (Ditzion, S., 1947). In 1968 information science began tha retrieval of machine stored data.. Information science and librarianship are similar, differing only at the end of the continuum (Rayward, W. B., 1983a).

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In post-industrial society, the political environment and the increased need for knowledge are most important (Wilson, Pauline, 1978). For example, poor relations in the university environment weaken the full utilization of college library potential (Stoica, I., 1977), and the political localism of a public library is impaired by population growth, knowledge expansion, and obsolescence of local collections (Brahm, W., 1964). These operational conflicts can be clarified by political analyses of library environment and resources (Raffel, J. A., 1974).

Comparative librarianship concentrates on similarities and differences in national environments, searching for common causes and their impact on the library movements, while international librarianship focuses on information about libraries in specific countries (Danton, J. P., 1973). Everywhere, however, librarianship is affected by changing social structures and philosophical interpretation of its role (Egan, M., 1955). Many libraries develop systems to fit the individual, so that the individual does not have to adapt by fitting the library systems (Harden, R., 1978). Those systems are determined by patrons' educational and social needs for information and library skills, reinforced by feedback (Salton, G., 1975; Gwynn, S., 1954).

The United States' contribution to the field of librarianship includes (1) considering a library as an organization of books, (2) introducing the service concept, (3) developing a library profession, (4) stressing its educational role and intellectual freedom, and (5) considering information as a public resource (Swank, R. C., 1963). The impact of American librarianship on French librarianship in the years 1900-1950, for example, was evident in the introduction in France of open access, children's work, adult education, the bookmobile, library education, the author/title catalog, Dewey classification, and reference service (Maack, M. N., 1986).

EP-Pd: Characteristics of library processes.

Whether librarianship has a philosophy or not, its methodology implies the philosophical function of generalizing verified conclusions, validated by consensus, not mere conjecture (Bliss, H. E., 1935). Since there is no one generic library, there is no single model for library operations (Pungitore, V. L., 1989).

Library proceedings evolved from the bookkeeping processes (McCrimmon, B., 1994), and libraries are evaluated in terms of their functions, not in terms of the fulfillment of their goals (Bergen, D. P., 1963a). Nowadays, the primary function is to maximize effective social utilization of graphic records (Egan, M. *et al.*, 1956). The responsibility for interpretation of published knowledge increases with the decrease of book availability (Edelman, H., 1976). Library mapmaking (i.e., compiling bibliographies) relates to the patrons information patterns and needs and to librarian-patron relations (Merikangas, R. J., 1987).

On the whole, library services exist only if there is a demand for them. Librarians help patrons only if asked, anticipating patrons' needs (Monroe, M. E., 1963). Some writers think that librarians should not mediate between the books and their readers but should instead concentrate on the development of tools facilitating access to the resources (Illich, I., 1978), and that the public library should gradually divert recreative reading habits from 'trash' to light literature (Fletcher, W. I., 1894).

The economic analysis of library activities focuses on the choice, allocation, and distribution of available resources (Raffel, J. A., 1974). There are three kinds of academic library services: (1) the college library, focusing on library instruction and patrons' self-service, (2) the university library, providing collections which are general in scope and specialized in content, and (3) research libraries, concentrating on information about the specialized resources (Harlow, N., 1963). The county library is responsible for the provision of reading material and for the development of love of reading among its patrons (Durell, T. J., 1938).

Incongruities in library processes include confusion between (1) the function to provide requested reading and the control of patrons' reading behavior, (2) efficiency in optimizing the use of resources and effectiveness in serving the information needs (Ladendorf, J., 1973), (3) the conflict between the commitment to the profession and to the employing institution, (4) the disharmony between provision of services and bureaucratic control by rules and regulations, and (5) acknowledgment of social changes by mere technical adjustments to them (Eggelton, R., 1979).

2.5.3 Valuational assertions.

VA-Co: Worth of the concept.

Shifting social values create tension and impact negatively on the public support of libraries (Becker, J., 1978). Librarians should not devise new virtues (imponderables), but should instead reinforce the existing ones by serving the community efficiently and by resolving emerging conflicts in terms of existing values (Sawyer, E. R., 1923).

The value-insight of librarians is limited and should be supplemented by value judgments based on established criteria (Matthew, D. A., 1969); librarians search for information without questioning its value (Wilson, Patrick, 1973).

Librarians' spiritual horizons are based on truth as a dynamic and static concept (Sewell, P., 1979). Librarians should be honest, should rise above social, political, or religious prejudice, and should aspire to an impartial, fair and openminded philosophical unity that would break down all barriers (Roberts, H. W., 1941). An ideal librarian, in eyes of some writers, is a bookman and teacher, opposing censorship and valuing the book as a life artifact and a symbol (Powell, L. C. 1954). They should avoid either condescension or self-deprecation in evaluating libraries in other countries (Moore, E. T., 1960).

Some people think that parables about librarianship must be demystified. (1) Libraries are not neutral institutions, this notion confuses neutrality with objectivity. (2) Intellectual freedom is a means toward a just society, not the accomplished fact. And (3) free access to information is a desirable goal, but limited in reality (Schuman, P. G., 1976). Although all librarians are for free access to resources and intellectual freedom, they do not always support these ideals in practice (Shields, G. R., 1977).

In the public mind the image of librarians is often that of inflexible elitists, considering books as the ends rather than means, indiscriminately collecting everything (Fragasso, P. M., 1979). The library-oriented sociology of knowledge is helpful in providing the 'what-why-where' of library values and patrons' attitudes; the sociology of librarianship stresses cooperation (Smith, G. M., 1973).

VA-Cx: Value of library environment.

Evaluation of library goals is difficult because of their interrelatedness with variety and use of library resources (Hamburg, M., *et al.*, 1976). Among the library values often discussed are the values (1) of manuscripts, scholarship, and love of books (Buton, M. & M. E., Vosburgh, 1934), (2) of an information environment that increases with the expansion of technology (Kaegbin, P., 1976), and (3) of realizing that some inefficient systems and unusable books may be of value in the future (Glazer, N., 1965).

VA-Pd: Significance of library processing.

In the age of specialization, the methods used in processing and accessing information are more valuable than the information itself (Kaegbin, P., 1976). The self-evident worth of librarianship and the patron's self-service is not sufficient argument in favor of librarianship (White, H. S., 1978).

## 2.6 Library Science.

### 2.6.1 Metaphysical definitions of library science.

Library science is defined as (1) a triadic, invisible, integral system of books, libraries, and readers (Frumin, J., 1977); (2) a cluster of interlocking professions (Boll, J. J., 1972); (3) a science of mind (Wright, H. C., 1979); (4) a humanistic discipline focusing on communication of ideas (not on transmission of signals) (Wright, H. C., 1981a); and (5) a practical knowledge of library processes and management, aiming at selection of needed resources (Grasberger, F., 1952).

As one of the metasciences, its method is based on scientific inference and its logical, epistemological, and ontological aspects. It focuses not on physical reality, but on logical, deductive, demonstrative, and conclusive knowledge (Wright, H. C., 1985a). Its social function is to study ways for satisfying needs and the technology of efficient operations. It is mission-oriented, aiming at the improvement of culture, independent of bibliography and information science (Frumin, J., 1977).

Library science is interpreted metaphorically as a discipline uncommitted to any other viewpoint, by providing insight to symbolic relationships between conceptual vehicles of information, their meaning, and interpretation (Nitecki, J. Z., 1979a).

2.6.2 Epistemological characteristics of library science.

EP-Co: Characteristics of the concepts.

The intellectual foundations of library science contain selection, organization, planning, and management of library resources; guidance in their use; and historical, philosophical, and legal aspects (Carnovsky, L., 1964).

The main function of library science as a science is to examine empirically discovered facts, and as an educational institution to analyze philosophical reasons for performing these functions (Borden, A. K., 1931). It manages human intellection based on knowledge subsistence. Frequent issues in library science include censorship, intellectual freedom, computer application, social activism, scientific management, and educational concepts (Dutton, J., 1988).

Library science focuses on understanding library problems and the use of technology in their solutions (Vickery, B. C., 1970). Its paradigms are defined by empirical functionalism, the socio-political behavior of patrons, and their perception of subjective staff behavior (Olaisen, J. L., 1985).

Library science is contrasted with science: the former focuses on form, rational methodology, and metaphysics of thoughts, the latter on matter, empirical methodology, and physical experiences (Wright, H. C., 1977b). Library science is also distinguished from librarianship; it concentrates on the theory and fundamental principles of librarianship, while librarianship is concerned with library practice (Langridge, D. W., 1978). It does not include archives (Roberts, J. W., 1987).

Its unique characteristic is the collection of recorded information; to include in its definition unrecorded information would change its basic functions (Wilson, Pauline, 1977); the definition ought to be based on books, their production, appearance, content, and use.

Library science is criticized for a lack of a fully developed theory and philosophy (Houser, L. J., 1982), and its ability to absorb information science and management is questioned (Gleaves, E. S., 1982).

EP-Cx: Characteristics of the environment.

Library science focuses on issues rather than activities because library collections existed long before the concept of service (Lancaster, F. W., 1983). It has a unique public, intellectual, and social environment, information transfer-related theory, and related problems (Hauser, L. & A. M. Schrader, 1978). As a social science, it educates and encourages reading based on its unique theories of recorded knowledge.

Social interpretation of library science context emphasizes selection of material conditioned by social, political, and religious factors, by available means, and by social setting. The integration of the library learning environment is developed at the political-organizational level, with similarities and differences in bibliographic organization reflecting related similarities and differences in subject disciplines (Knapp, P. B., 1964).

The application of new technology is determined by the needs of the society, requiring a new environment that would relate a library as a social agency to business activities (Penniman, W. D., 1987), based on market strategy.

Library science faces two environmental enemies: cultural apathy and preoccupation with technology (Handlin, O., 1987). Expanding information technology will create a "library without walls" (Lancaster, F. W., 1983).

## 2.7 Information.

### 2.7.1 Metaphysical definitions of information.

ME-Co: Meanings of the concept.

The definitions of information are ambivalent. It is considered as a potential utility, a mathematical equation, a paradigm, a cause of uncertainty, a component of physics or semantics, a context of the message, a base for classification, a measure, a property of matter or consciousness, a process of information retrieval, or information-related phenomena (Belkin, N. J., 1978). It is also defined as a relation between data and their recipients (Battin, P., 1984) and seen as a content of a message (Neill, S., 1980) or a message itself (a physical carrier and its content) (Koblitz, J., 1969).

The meaning of information can be semantic: as a primary (raw data), secondary (about information), or tertiary (by-product of primary information) concept (Menou, M., 1969). It consists of data describing part of reality (Information 1), Ideas of internal reality (Information 2) and personal perception of reality based on Information 1 and 2 (Information 3) (Dervin, B., 1977).

(a) In librarianship, information is a commodity and patrons are considered its customers, whose images of information become natural entities of reality (Frohmann, B., 1922).

(b) In biological sciences, information is a content, organizing the structure of environment.

(c) In communication sciences, information communicates meaning (McGarry, K. J., 1975). It is that which one is told (Machlup, F., 1983); a commodity (Debons, A., 1974); Shannon's signal transmission; knowledge communicated to individuals; a thing, a means for communication (Buckland, M .K., 1991).

(d) In social sciences, it is a communication of social meaning (McGarry, K J., 1975).

In general, information is always about something, defined in terms of its effects (MacKay, D. M., 1969) as a ratio between possible answers existing before and after information is obtained (i.e., a negentropy) (Brillouin, L., 1962).

Information is subjective and can be a phenomenon or a process, caused by external stimulation (Curras, E., 1987), free from mass and energy, intangible, part of a social process, reproducible, contingent on processing to exist as an image in person's mind (Diener, R., 1989).

Information is a part of both information science and library sciences, also of artificial intelligence, cognitive science, and mathematics (Machlup, F. & U. Mansfield, 1983b).

ME-Cx: Meaning of its environment.

Information can be a part of environment in a system (Debons, A., 1974), or a factor in changing it (Anderton, M., 1987). As an abstract phenomenon (Wright, H. C., 1977a), information is defined as nonphysical; independent of and external to human actions (Rohde, N. F., 1986a); a metaphorical, nonliving organism, or a statistical probability; (Machlup, F., 1983); a utility, a mathematical equation, a source of uncertainty, context of the message, base for classification, a measure, a property (Belkin, N. J., 1978;) or a theory (specialized information) (Koblitz, J., 1969).

As a physical phenomenon, information is defined as a property in the environment (Stonier, T., 1991), a physical manifestation of a constant need for information (its paleology) (Arntz, H., 1983).

Major themes in information environment are literacy, organization of knowledge, dissemination, free access, and economics of information. Philosophical aspects of information are discussed by Dretske (in the context of communication and theory of knowledge); Nauta (as a linguistic and semiotic meaning); Machlup (as economics of information); Marxists (as tool for regulating society); Davis (as management of information system); system theory (as relationships between decision making and information); and Kuchen (distinguishing among the elements of a data-information-knowledge-wisdom system) (Stevens, N. D., 1986).

ME-Pd: Definition of its processes.

As a process in engineering (Debons, A., 1974), information is an act of informing individuals (Buckland, M. K., 1991a), a part of information retrieval, or a transforming device (Anderton, R. M., 1987). Process can be primary (production, accumulation, and retrieval of information) or auxiliary (storing and distributing information) (Koblitz, J., 1969). As a part of a system, information is a transformation device, a part of mass-energy system, its flow (Anderton, R. M., 1987), and a force in changing environment, or a process of assigning meaning to code systems (Young, T. R., 1987).

### 2.7.2 Epistemological characteristics of information.

EP-Co: Characteristics of the concept.

(a) Approaches.

The cognitive approach to information focuses on behavior in the use of information; it is easy to observe but difficult to validate, hence requirements for information are determined individually by each of its users (King, D. W., 1988).

Metaphysically, information represents a discontinuity in perceiving reality (Dervin, B., 1992). Epistemologically, it reflects the ideology of the person defining it. It always existed, although in changing form. It cannot be measured until it has meaning, which is established in social context. It is not independent of economics, because economics cannot exist without information (Marvin, C., 1987).

(b) Range of information.

The scope of information includes, data, facts, theories, opinions, communication, and commodities (Apostle, R. & B. Raymond, 1986).

As an isolated collection of unrelated facts, information has less structure than knowledge and has to be associated with prior structure before it is absorbed in the mind as knowledge (McHale, J., 1976). It becomes knowledge when correlated, synthesized, and stratified (Narayana, B. J., 1984).

Electronic media address information ends only, without reference to information means of attaining these ends (Dervin, B., 1976).

In librarianship information is a function, not a format (Battin, P., 1985). Its invested interest is in the relationships between information and public policy (Irving, R. D., 1988). The contribution of librarianship to communication is in shifting meanings of information from the mental record of experience to its explanation in written records (Foskett, D. J., 1968).

As an economic commodity information is subject to market forces; as a public good it is regulated by the government (Irving, R. D., 1988).

(c) Its properties.

Information is viewed as a public or exchangeable good, a content, or a value-added process cognitively interpreted (Repo, A. J., 1989). It contributs to new theories involving right information at right time, and is concerned about ethics of

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information privacy and misuse (Garfield, E., 1987). It is an intentionally transmitted communication (Ford, N., 1980).

Negative information is distinguished from irrelevant information (Artandi, S. A., 1973). Information effectiveness is measured by its ability to convert to knowledge (Bergen, D. P., 1978). More information is not always better (Rees, A. M., 1964b). Information literacy means ability to use information or the possession of knowledge of information (Behrens, S. J., 1994).

(d) Its functions.

Information functions include: (a) assistance in creativity by recognizing, interpreting, retrieving, and displaying relevant analogies and patterns (Bawden, D., 1986), (b) a condition for knowledge-system effectiveness; and (c) 'sense-making' approach in formulating questions in reference work (Dervin, B., 1992). (d) An information system is just one of many information channels (Vickery, B., 1987). It consists of relationships between an initiator of information, its receiver, the intermediary (librarian), and the information process (Gilchrist, A., 1986); it is communicated through input (acquisition), output (service to users), resources, and human interface (Lazár, P., 1984). Non-physical information *qua* information cannot be the subject of a scientific system, because science must have a physical referent (Wright, H. C., 1976a).

(e) Differentiation.

There is a difference between information that relates to the specific interest and the enlightenment that addresses broader issues of insight and understanding of the total reality of life (Vestheim, G., 1992). There is also a confusion between the meaning of terms 'demand', 'need', 'want', and requirements for information (Roberts, N., 1975).

(f) Philosophical issues related to information.

Philosophical issues related to information include questions about (a) the status of information as an entity, independent from a physical format, (b) its physical and measurable manifestations, (c) relations between information quantities, (d) information continuity status, (e) manipulational limits of matter and energy, and (f) the laws of information operations (Otten, K. W., 1974). The problems in defining information are often explained away by focusing on information functions rather than its nature (Fox, C., J., 1983). Also of interest in the philosophy of librarianship are the issues related to systems theory (decision making), information literacy, organization of knowledge, dissemination, free access, and economics of information.

EP-Cx: Characteristics of information environment.

Environment is defined as available information which assists in setting and achieving goals (Dill, W. R., 1962). The control of the information environment started in 1990 by defining its purposes in the political and economic environment (Beniger, J. R., 1986).

Information facilities increase with demand for them, creating an environmental gap between haves and haves not (Cawkell, A. E., 1986). However, information itself is not subject to the law of supply and demand because it can be sold and retained at the same time (Gell, M. K., 1981).

It is a fallacy to assume that sufficient information will always satisfy information needs, because information itself depends on its understanding by the person in need of it (Du Mont, R. R., 1981). What is critical here is not so much a need for information, but its retrieval value as a vital necessity in survival (Frants, V. I. & C. B. Bush, 1988); uncertainty is created by a lack of information (Hollnagel, E., 1980).

Philosophical issues related to the nature of information include subjectivity and objectivity in the use of information discussed by both Popper and Dervin. The philosophical assumptions of the Information Age surmise that information is a principal societal commodity and that its economic engine is capable of unlimited growth. This assumption is challenged on the ground that the description of the Information Age is ideological, problematizing the relationship between the real social practices and their prescriptions, and that information growth is not the same as the growth of knowledge (Slack, J. D., 1987). Furthermore, Popper's World 3 is criticized for ignoring human content and context of information (Rudd, D., 1983).

EP-Pd: Characteristics of information processing.

Information societies always existed; they differ in the kind of information needed (Havard-William, P., 1987);

information processing has been revolutionized by the introduction of computers and the dissemination of information has been increased by reprography.

Information needs are natural, physiological, emotional, and cognitive, and they motivate accomplishment of goals by learning (Bernatowicz, K., 1987). Information processes consist of gradual steps toward a discovery of new information by sifting, reviewing, and synthesizing available records (Kochen, M., 1967).

'Informationism' is (a) a process or a phenomenon, responding to external stimuli (Curras, E., 1987); (b) the end result of a process (Skovira, R. J., 1989) which depends on processes that produce it and cannot be defined independently (McGarry, K. J., 1987); and/or (c) a product of transfer of organizational structures aiming at reduction of uncertainty (Leupold, M., 1983). It is filtered, interpreted, abstracted, and affected by biological and artificial needs for more information (Ligomenides, P., 1985), and it changes knowledge about reality (Foskett, D. J., 1970). Empirical information is analyzed by frequency-rank statistics while metaphysical interpretation focuses on mental realities (Brookes, B. C., 1980b).

Entropy is a measure of the energy that is unavailable for useful work. The concept raises a philosophical question about the meaning of information, its value and interpretation. In the library, entropy interrupts orderly library systems and is counteracted by order-creating processes (e.g., indexes), vocabulary control, and subject classification (Shaw, D., 1982).

Information technology prompts changes; without changes information is irrelevant (Parker, M. M. & R. J. Benson, 1987). Information inquiry is serendipitous, and it may lead to unexpected results (Carr, D., 1981). Information retrieval does not add to knowledge; it provides information-relevant documents (Christ, M., 1972).

Search methodology is based on users' input, followed by factors affecting information retrieval (Ingwersen, O., 1982). Semantic noise (different meanings of the same signal) limits information (Miller, G. A., 1983a).

Information centers serve specialized information needs for theoretical scientists (Weinbert, A. M., 1964) and documentalists who perform library-type tasks, requiring specialized subject knowledge that focuses on bibliographies and activities beyond librarianship (Mohrhardt, F. E., 1964).

Problem solving is a stimulus-response process aimed at solving information needs, with the needs acting as stimuli for satisfying these needs (Haverlock, R. G., 1977).

Information made available to all destroys privacy, eliminates jobs, and increases the power of those who have it, distancing them from those who lack information (Caldwell, A. E., 1986).

The metaphor of the ant colony illustrates information processes. Neural firings in the brain, stimulated by information, trigger other patterns of activities independently of central nervous systems and uncontrolled by logic. Thus data do not carry special meaning, but trigger patterns of symbols, similarly to individual ants, whose movements are not centrally controlled, although each movement affects the total behavior in an ant colony (Hofstadter, D. R., 1985).

2.7.3 Valuational assessments.

Va-Co: Definitions of information value.

Information does not exist by itself; it is a part of the social, cultural or material, value system (Benge, R. C., 1984). It must be used to have value (Narayana, B. J., 1984) and is free from ethical intentions in satisfying needs (Belkin, N. J. & S. E. Robertson, 1976). Its value is in its ability to describe reality (Rohde, N. F., 1986).

The quality of information practice can be improved by epistemology of design science, research logic, integration of functions, and transformation of information system (Moigne, J. L., 1985).

VA-Cx: Context of its valuational assertions.

Information acquires value in decision-making processes, and this value increases with the increasing cost of alternatives (Melody, W. H., 1986). As a resource or commodity, the value of information is determined by market price (Converse, W. R., 1984). As a marketable commodity, information is non-excludable and non-depletable, and its value is defined in terms of costs of services and their benefits (Shaw, V. A., 1987).

In the present market-oriented society it is important to understand how and to whom librarians promote themselves. The focus ought to be on the perception of librarianship by others, not by librarians themselves (Boardman, E. M., 1988).

Va-Pd: Valuational assertions of its processes.

The economic value of information enhances the returns on investment, assists in planning, offers competitive advantages and provides information to managers (Parker, M. M. & R. J. Benson, 1987). As a product, information has political and economic value; it does not follow the law of energy conservation, although it becomes obsolete (Artandi, S., 1978).

## 2.8 Information Science and Informatic.

### 2.8.1 General Comments.

The contributing factors in the emergence of information science were the following: studies in linguistics and semantics (1933); value inquiries (1938); decision theory (1939); documentation and its physical aspects (1945); information theory and cybernetics (1948); communication and behavioral sciences (1950): and information science as a communication discipline, focusing on maximum accessibility and usability of information (1962). It became an objective, subjective, and practical domain made of inquiries extended to liberal education (cybernetic pragmatism), humanities (epistemo-dynamics), engineering (symbol manipulation, statistics, cybernetics, bionic, mathematics, library science, and documentation) (Harmon, G., 1971).

Sarton was the first historian of information science and the founder of ISIS. E. W. Humes used the term 'statistical bibliography' of science; Pritchard applied 'bibliometrics' in quantitative analyzes of citations (Garfield, E., 1973).

Philosophical issues in information science include metaphysics of classification, social epistemology emphasizing relevance, and the judgment of cognitive authority (Woodward, D., 1987). Philosophical implications of information science must be considered in the context of human ability to absorb information technology (Saksida, M., 1992).

Humanization of information science focuses on its assistance to users. The approach reinterprets some of the common notions. (a) Computer technology is a historical accident rather than a scientific organizing principle. (b) Library effectiveness is not synonymous with efficient management. (c) The main goal of library information science is to bring together information seeker and information sought in the human context. (d) Computers, book collection, and building issues should not be confused with library function to provide needed services (Elman, S. A., 1976).

The discipline is considered by some writers as a misconceived movement, since information is a noetic form, not a physical referent, and the study of information should be of its form; information science studies not information but its vehicle (Wright, H. C., 1976b).

### 2.8.2 Metaphysical definitions.

(a) Information science.

Information science is (a) a study of information producing processes in any information system (Hayes, R. M., 1993); (b) it is a facilitator of communication processes (Belkin, N. J., & S. E., Robertson, 1976; Boyce, B. R. & D. H.

Kraft, 1985); (c) it studies information needs, information systems and services (Settle, B. & D. A. Marchand, 1988); (d) it consolidates various topics, such as intellectual property, methods of assigning values and costs, impact of information technology, information policy, and relationships with other disciplines (Haas, W. J., 1987); (e) it is a practical approach concentrating primarily on the behavior of individuals seeking information (Roberts, N., 1976). It investigates properties, structure and transmission of specialized knowledge, and it develops methodology that includes (1) logic and mathematics (in information retrieval), (2) behavioral sciences (in psychology and sociology of communication), (3) linguistics (in transmission of knowledge), and (4) systems (in evaluation of information organization as a whole) (Taylor, R. S., 1973). Because of a lack of a consensus on its definition, information science is not yet considered a full science (Wellish, H., 1972). Here are some examples of a diversity in definitions of information science. It is (1) a triangle of a computer (data), management (data technology relations), and organization (description and explanation of relations) (Swanson, E. B., 1987); (2) a subsystem of sociology since it involves people (Fairthorne, R. A., 1968b); (3) a field that can be defined in terms of information needs, aiming at the reduction of uncertainty, or data reducing them (Wersig, G. & U. Neveling, 1975); (4) an investigation of the properties and behavior of information flow and means of maximizing its accessibility and usability (Schlutter, R. A., 1968); a medium which generates, organizes, and transmits information (Tague, J., 1979); (5) the study of principles and purposes of information applications (Fairthorne, R. A., 1969) and communication principles and processes of information systems (Goffman, W., 1973); (6) a means to the end of focusing understanding the nature of information and its interaction with people in a particular environment (Rosenberg, V., 1974); and (7) a discipline which encompasses the hypothesis of Shera's social epistemology, Young's biological exosomatic brain concept, and Popper's objective knowledge theory (Brookes, B. C., 1974). It considers information science as metascience (Debons), as its meaning (Whitemore, Yovits), as a signal (Shannon), as a structure on analytical and semantical levels (Otten), and as knowledge-understanding-wisdom (Kochen) (Rogers, A. R., 1984b).

Information science should be defined in rhetorical terms based on Heidegger's and Gadamar's hermeneutics, rather than in purely technical, heuristic terms that embrace ethics and politics (Capuro, R., 1991).

(b) Informatics.

Informatics was formulated to cope with insufficient information retrieval (Merta, A., 1969), and to reduce the information lag between inventions and their applications. It is a mission-oriented approach, and its subject matter consists of processes, methods, and laws relating to information activities rather than to information itself (Mikailov, A. I., *et al.*, 1969).

Informatics is a scientific discipline reflecting scientific and technological levels of society and complex systems of social information processing (Kubatova, V., 1974); it is also a form of knowledge, separated from its producer. It is studied (1) as knowledge by information science and semiotics, (2) as a signal by cybernetics, and (3) as a component of control processes (Mikailov, A. I., 1983). As a semiotic discipline it is concerned with symbolic expressions and their manipulations (Pearson, C. & V. Slamecka, 1983).

Informatics maximizes communication for specific social objectives and purposes in distribution and organization of scientific information (Belkin, N. J., 1975). It is defined as (a) a discipline focusing on general laws and regularities governing the collection, storage, retrieval, and dissemination of scientific information (Mikailov, A. T., 1969), and (b) a study of the processes of transforming information into new knowledge.

Informatics is compared with ideology, interpreted as a systematic body of concepts and knowledge, as that which is symbolized in the communication (Gorn, S., 1983).

Both informatics and the science of sciences study relations between theory and practice in social sciences; they differ in focus: while the science of sciences converges on primary information, informatics concentrates on information transfer and dissemination of primary information (Dembowska, M., 1974).

Information system consists of data and the data's processing into information, knowledge, and wisdom (ethical judgment). It is a complex of phenomena studying information processes, managed and processed by librarians (Hayes, R. M., 1969).

2.8.3 Epistemological characteristics.

EP-Co: Characteristics of the concepts.

Lack of a clear definition of information science results in a variety of interpretations provided by different disciplines: (1) cognitive sciences stress linguistic, social, and philosophical aspects of the discipline, (2) socio-technological sciences concentrate on computer, library, information sciences, and management; and (3) systems science focuses on cybernetics, information, and system theories (Nitecki, J. Z., 1988b).

The discipline's purposes, contents, and availability vary with available resources, resulting in the decentralization of information systems (Dearden, J., 1987). The discipline is viewed as a cognitive science, informatics, history of artificial intelligence, linguistics, library and information sciences, cybernetics and history of information theory (Machlup, F & U. Mansfield, 1983a).

Together with logic and philosophy, information science deals with relevance as measurements of its effectiveness (Saracevic, T., 1975). It should include (a) relationships between natural and artificial systems (Suppe, F., 1985a), librarianship, social practice, and services, (b) client-agent relations, the primacy of communication, the nature of information content, and (c) its role in society and research (Schrader, A., 1986a). There is a need for a formal information science language (Debon, A., 1990).

Overall, information science contributed to: (1) the emergence of a new metascience, (2) differentiation between information science (containing pure and applied theories) and librarianship (as a profession), (3) provision of focus on cultural, social, and spiritual values, with management of knowledge as social resources, and (4) the introduction of informatics as a new discipline (Cook, G., 1976).

The ideology of information science determines its paradigms and the criteria for evaluation of its relevance (Wegner, P., 1983). Non-reductionistic and interdisciplinary interpretation of information science is based on cybernetics, semiotics, and controls (Brier, S., 1991).

Information theory is a necessary but insufficient aspect of information science because it deals with statistical properties of data only (Helprin, L. B., 1985). However, no theory in information science exists that would provide unique testable phenomena (Boyce, B. R. & D. H. Kraft, 1985). For example, Popper's model is rejected because of the impracticality of its falsification component, and because his concept of knowledge differs with each discipline (Rudd, D., 1984).

The model of information science is composed of computer science (data, software and hardware), management science (a normative base for the discipline), and organization science (focusing on functions of information system) (Swanson, E. B., 1987); it also includes information: its production, control, storage, retrieval, use, and bibliometrics (Neill, S., 1987; Olsgaard, J. N., 1989).

EP-Cx: Characteristics of the environment.

Information science can best be understood in a context of systems that study information- producing processes and methodologies in specific disciplines (McGarry, K. J., 1987). The environment of information science consists of scholarly contributions and sociological changes in attitude toward technological developments (Lilley, D. B. & R. W. Trice, 1989). Information science emerges as a factor in social development (Da Costa, A., 1990), and it may form a suprasystem that would unify art, sciences and professions (Harmon, G., 1973).

Major environmental phases in the development of information science include: V. Bush's hypothetical storing and searching device (1945), emergence of information scientists (1948), machine organization and search of bibliographies (1951), introduction of the uniterm index (1953--59), the first textbook in information science (1969), national and international policy analysis (1973), and the first handbook for online search (1984) (Herner, S., 1984).

EP-Pd: Nature of the processes.

Information science is contained in processing (computers and libraries) and cognitive systems (psychology, cybernetics, and operations research) (Mansfield, U., 1982). Inclusion of a computer in the discipline expands its scope and redefines its practice (Suppe, F., 1985).

Fundamental in information science is the facilitation of the utilization of records. Facilitation means an ability to organize action; utilization describes ways records can be used in conveying meaning (Lipetz, B. B., 1980).

### 2.8.4 Valuational assertions.

The evaluation of information systems is based on (1) volume of data available and on the spread of their transmission, (2) the reliability and adaptability of the system, (3) the authors' intentions, (4) the values of the system as perceived by its specific users and by the public in general (Stampre, P., 1988).

However, information science failed to serve ordinary people, and librarianship cannot guarantee reading satisfaction (Neill, S. D., 1973.) Information science may disappear because it is not easily distinguished from library and computer sciences (Wersig, G. & G. Windel, 1985).

## 2.9 Relationships between Library and Information Sciences.

### 2.9.1 Metaphysical definitions.

Relationships between philosophy, science, librarianship, and information are studied by focusing on the concepts and scopes of these disciplines (Souza, S., 1986). However, definitions of both library and information sciences are confusing, contradictory, and insufficient. Methods defining these field include: (1) empirical, based on self-evidence and observations, (2) conceptual, based on a priori logical analyses, (3) general systems, considering library and information science (LIS) as 'symbolic culture accessing systems' based on inquiries about social practice. Definitions of library and information science must go beyond empirical method, by focusing on scientific formulation of theoretical hypotheses related to social environment, logical, and conceptual inquiries of other disciplines (Schrader, A. M., 1983).

2.9.2 Epistemological characteristics.

a. General comments.

Librarianship is perceived as a process of fulfilling needs, stressing the activities rather than the subjects, and extending the study beyond the physical book, its storage, and its preservation. Broadly defined, the concept of information is the same in library and information sciences. Information science is not only a branch of librarianship in its study of information technology but also an emerging theoretical foundation for all information agencies in a new discipline of library information science (Stieg, M. F., 1992).

Concepts of information science are integrated with those of library science. Its philosophy, theory, and principles are relevant in both as parts of the discipline as a whole (Borko, H., 1984). Librarianship bridges the gap between information and its applications (Mathews, V. H., 1981).

The social role of information science was formulated by its relations to librarianship and to computer, cognitive, and communication sciences (Saracevic, T., 1991).

b. Similarities.

Both domains emerged from the humanistic environment. aiming at equilibrium between mind and spirit (Curras, E., 1985); and both developed later in a mechanistic world view of Newtonian physics, behavioristic psychology, and computers all of which based on the principle of atomic particles considered as building blocks of theory. However, these assumptions are now questioned because of uncertainty in the principles of quantum mechanics, relativity theory, and the subjectivity of empirical observations (Beagle, D., 1988). Hence, both domains are in transition but are seldom interpreted in historical context of selecting, organizing, and facilitating use of cultural records (Nitecki, J. Z., 1990).

Both library and information science (1) study human behavior in information exchange aiming at the creation of knowledge and ideas (Boyce, B. R., 1994); (2) embrace practitioners who are members of learned societies but are not scientists themselves; (3) share the same problems in designing and operating information systems; (4) are service-oriented, (5) are changing fast (Vagianos, L., 1972); and (6) should include post-documentation of electronically produced records, requiring new organizational criteria (Davenport, E., 1991).

Both approaches procure and handle information and apply new technology (Apostle, R. & B. Raymond, 1986; Bohnert, M., 1989). Information science is a part of library science, not a separate discipline; its claim to uniqueness has no empirical, philosophical, definitional, or sociological evidence (Houser, L. J., 1988). Librarianship always provided services and at the present has merely modified them by adding new hardware. Hence there is a need to add word 'information' to the name of the domain 'librarianship' (Stokes, R. B., 1969).

c. Differences.

Although both disciplines have the same basic objectives, they differ in the techniques used. Information science is independent of any particular environment, while library science depends on parental institution or community (Gates, J. K., 1990). Some writers maintain that these differences are in the type and extent of services offered, rather than in techniques employed (Rees, A. M., 1964a).

The following are the basic differences between the two domains. (a) In library science information is handled in a documentographic way, focusing on content, location, annotation, classification, and the indexing of bibliography and reference: information science handles information in factographic way, focusing on important aspects of documents reviews and abstracts (Koblitz, J., 1969). (b) Information science focuses on subject analysis of information electronic data processing, on principles of management, on sociology of knowledge and on subject bibliography. Library science focuses on interaction between patrons and ideas, the communication of recorded information, the origin of data, its production, growth, and organization, the user's needs, user motivation, and management (Caldwell, W., 1970). (c) Information science investigates properties and behavior of information, its organization, storage, retrieval, interpretation, and utilization. Library science concentrates on storing and disseminating knowledge contained in documents (Borko, H., 1968). (d) While library science focuses on service, information science dwells on inquiry about library efficiency; both deal with information transfer (Wright, H. C., 1988). (e) Library science structures information sources; information science assembles, selects, correlates and analyzes the use of information (Pickup, J. A., 1987). (f) Library science concentrates on access, storage, and retrieval of information, and information science interprets these activities within the total recorded experience (Debons, A., 1985). (g) Shannon's code-message-channel is a black box of significance in informations science, and Fairthorne's source-designation-destination is a black box of librarianship (Bognert, L. M., 1974).

Information studies are interdisciplinary and include, in addition to library and information sciences management, computer science, communication, psychology, linguistics, and statistics (Large, J. A., 1988).

d. Library Information Science (LIS)

A newly emerging library information science (LIS) provides dual perspectives: (1) internal relationships between itself and information processes, and (2) external focus on activities in organizing information (Foskett, D. J., 1974).

(1) In the internal perspective, information is a content of communication; the library facilitates that communication by organizing records and information about them, and provides

guides to the interdisciplinarity of knowledge (Allen, B., 1981).

Library problems exist mainly in physical access to records, but information science problems are cognitive, addressing the impact of changes on library patrons (Brookes, B. C., 1981).

Whereas library and information sciences focus on written records, and library science stresses their organization, information science covers the information-knowledge-wisdom relationships in these records (Kochen, M., 1983).

Librarians consider information as having a semantic meaning for its users, since it is acquired by them by being told about it; knowledge, on the other hand, is acquired by thinking about it. Information science is an inquiry, and library science a service, with books that are more than containers of information, since they include things other than information (e.g., in fiction) (Wilson, Pauline, 1988.)

(2) In the external perspective, the information profession includes librarianship, information systems, and resource management; it provides professional, educational, and disciplinary context and is considered a turf of informational operations (Donahue, J. C., 1987).

Information environment includes librarianship (preservation, access, and professional concerns), information science (theoretical study of physical and conceptual aspects of information), and information retrieval (users' interaction and search strategy). Schools of business administration focus on information management, operation research of general systems, and decision-making processes. Engineering schools concentrate on computer aspects of information (Hayes, R. M., 1994).

In the professional sense, past philosophical interest in librarianship had little effect on the profession; information science can help by contributing scientific methodology (Saracevic, T. & A. M. Rees, 1968). It incorporates librarianship, computing, communication, and related disciplines by focusing on knowledge, its characteristics, its acquisition, and its management (Foskett, D. J., 1972). It provides an interdisciplinary approach for addressing the consequences of the application of instructional technology to librarianship (Jackson, M., 1984).

## 3.0 Major components and concepts of library information science (LIS).

### 3.1 Generic books.

### 3.1.1 Metaphysical definitions.

A number of complementary definitions describe the generic book as: (1) an independent entity, transcending reality, the meaning of which is expressed in print and interpreted uniquely by readers, as a substitute for experience, thought, and memory (Butler, P., 1953a); (2) the essence of librarianship, a record of ideas about a universe composed of causes, relations, and meanings (MacLeish, A., 1972); (3) a carrier for a permanent text, made of varying materials and format, which reflects cultural needs and available technology and is designed for distribution (Metzger, P. A., 1994); (4) an essential transmitter of knowledge and an object of affection, containing facts and ideas that express the universal mind of humanity (Bostwick, A. E., 1907); (5) a record of civilization and a total means for communication (Shores, L., 1971); and (6) a vehicle for ideas that affect everything (Wallace, S. L., 1960). The philosophy of book use calls for full and free access to book collections (Kerr, W., 1947).

### 3.1.2 Epistemological characteristics.

A distinction is made between the nature of information and the generic book: (a) information is raw data, removing uncertainty, (b) a book may contain knowledge (interpreted data), understanding (a synthetic processes), and wisdom (which combines knowledge, understanding, and experience) (Kochen, M., 1969). Books endure, are cumulative, add new knowledge, and have focus and tradition, while information is about everything, making the reader well-informed but ignorant, and it quickly becomes obsolete (Boorstin, D. J., 1982). However, books are also dispensable and will be replaced by different and better devices (Lancaster, F. W., 1985).

In McLuhan's 'the medium is the message,' the mind is reduced to a tool. However, the message in the book contains information that is assimilated in the mind as knowledge (Foskett, D. J., 1979). The concept of book obsolescence refers to its format, not its content. McLuhan does not pass judgment on the changing message, but on the obsolescence of its format.

Facts are meaningless without ideas that determine their meaning. A distinction is made between (a) 'conformation in book' (i.e., ideas contained in the carriers of information) and bibliographic citations that are merely pointers to the ideas (Traue, J. E., 1992); and (b) the data of the content analysis (document) and their context (the author's intended meaning). Content analysis is either a research method or an unscientific interest in the text (Allen, B. & D. Reser, 1990).

Librarianship is basically the collection and preservation of books, available to patrons for instructional and intellectual purposes; they will be supplemented but not supplanted by new technology (Powell, L. C., 1957, Radcliff, F. W., 1991). The format of the book is an indicator of its past successful use (Neill, S., 1971).

Librarianship is responsible for the preservation, dissemination, and interpretation of the knowledge contained in books (Shores, L., 1971). The primary aim of the library is to bring books and readers together (Wallace, S. L., 1960).

Library standards reflect readers' educational and economic status. They oscillate between scientific, precise description and literary, intellectual analyses. The standards are not self-evident and require special skills (Steiner, G., 1972).

There is a shift (a) from a focus on the physical book and its content as inseparable concepts, to one considering content of the book and its management as a primary element, and book issues as incidental (Adams, T. R., 1984), and (b) from a book as a material thing to a book as a living function, implying that it must be policed by librarians as doctors and hygienists of reading (Ortega, J. G., 1934).

In spite of the predominance of computerized technology, there is still a lack of interest in incorporating the electronic book in library collections, although it will become the future carrier of information. Electronic book publishing should be influenced by the needs of library patrons (Robinson, C. M., 1992). However, pseudo-philosophical discussions of virtual reality do not contribute to the understanding of the electronic media (Heim, M., 1993).

### 3.1.3 Valuational assertions.

The value of books varies with their readers and non-readers, with the content of the book, and with readers' knowledge of the subject. Hence, the monetary value of a library system is only a part of its total value to the education, literacy, and democracy (Smith, J., 1981).

The esthetic approach to librarianship stresses the inspirational values of books, their assistance in formulating character by providing background for understanding reality, and increased sensitivity to cultural values. A belief in book values is a prerequisite of the library profession (Haines, H. E., 1950).

Librarianship is not primarily involved in education or science, and it should focus on esthetics of book reading as a cultural phenomenon, by propagating good books that are not affected by standards of mass culture (Sayers, F. C., 1950). Book selection is based on its value to the readers (Benjamin, P. M., 1962).

3.2 The bibliography.

Broadly defined, bibliography is a science of books and their intellectual aspects: narrowly defined, it is a study of literature that relates to: (a) library collections and catalogs, (b) a book's subject, (c) the history of books in research and criticism, and (d) the philosophy of logical and ethical interpretation of books' functions (Schneider, G., 1934).

Bibliographic control provides direction for publishing processes. It is mindful of the cybernetic law of variety (only variety can destroy variety); it also relates to the relevance of information retrieval and provides a stimulus for new thoughts in the mind of a person using retrieval system (Wellish, H., 1979).

The bibliographic community is a heterogeneous group that includes librarians, information scientists, engineers, and various technicians. Its objective is to make the output of the publishing industry accessible by identifying the existence of particular publications (Wilson, Patrick, 1983).

Bibliotherapy is defined either as a tool for treating a psychological disorder or as a guide to reading materials. Readers' level of reading ability is related to their intellectual development, which influences personal behavior and moral or ethical values (Churchyard, R., 1978).

Bibliotherapy is used for growth and healing by means of literature and by direct dialogue between facilitator and participant, based on unique reactions of participants to various kinds of reading (Hynes, A. M., 1987).

### 3.3 Bibliographic instructions.

The philosophy of library instruction states that it is librarians' responsibility to implement it on continuous bases (Dudley, M., 1983). The basic function of instructional material centers is to support school-wide, independent, and group-wide inquiry, with creativity as its key objective (Taylor, K., 1968).

Teaching students what to learn prepares them for the past, but teaching them how to learn prepares them for the future. The best approach is for students to learn the use of library resources by themselves with occasional teachers' assistance

(Stueart, R. D., 1981). However, the notion that librarians should teach patrons how to use bibliographic tools themselves, claiming at the same time librarians' exclusivity of bibliographic knowledge, is a contradiction (Berry, J. J., 1977).

Controversy about bibliographic instructions is reflected in the views of (a) Patrick Wilson, who supports it, maintaining that reference teaches the use of a library, and (b) Pauline Wilson, who opposes it, maintaining that librarians are not teachers and library instruction interferes with patrons' self sufficiency, discouraging independent learning. The compromise is to recommended instruction for certain libraries only; some patrons can be encouraged to learn the use of the library themselves, while others may need instruction (Harris, R., 1989).

## 3.4 Censorship.

### 3.4.1 Metaphysical definitions.

The meaning of censorship varies with historical period (Stielov, F., 1983, 1984). It is an argument against the freedom to read (Wagman, H., 1964). However, freedom itself is a philosophical paradox since the freedom of an individual is bound with the freedom of other individuals. Hence, the library approach to individual needs must be based on individual freedom to read, in the context of the freedom to read by others (Dyer, C., 1969).

Censorship may be an expression of a social protest, objecting to the values propagated by a given book, as conflicting with the values of the library community. Negating such a protest may preclude the possibility that the protestors have a valid concern (Strover, M., 1994).

3.4.2 Epistemological characteristics.

Book selection and censorship, although identical in effect, result from different causes. Censorship is most often invoked in the areas of (1) political freedom, which is not an absolute concept, often determined by courts, (2) religion, implying free speech protected by more free speech, and (3) morals, determined by the author's intent, the effects of his work on others, and the community consensus (Carnovsky, L., 1950).

Confusion between book selection and censorship is explained in part by a book's potential to disturb the status quo, which produces uncertainty and disagreements in the community; yet, freedom to read is directly related to objective library service (Cushman, J., 1962). The use of censorship to limit expression is synonymous with selection based on quality of material (Gaines, E.J., 1968).

Arguments for censorship include the notions that: (1) the library's mission is to enrich the community, (2) selection must be made, since no one can have everything, (3) societal values cannot be ignored, and (4) extreme views reduce intellectual freedom by dehumanizing individuals.

The conflict arises when the community standards contain prejudices and challenge the librarian's decision (Neill, S., 1988). As a social integer, librarianship makes recorded social memory available to the public, exercising censorship as its social duty (Vincent, G. E., 1904).

The library shapes public judgment by providing evidential material (Ogilve, R., 1940). Its service must be free of propaganda (Green, S.S., 1876), although the public library is expected to censor material that is unacceptable to the community it serves (Neill, S., 1988).

Since the impact of reading on individuals will never be fully determined, the censorship of any book, expressing any ideas, is not justified (Fletcher, H. L., 1968).

### 3.4.3 Valuational assertions.

The importance of reading material by itself is not enough to counteract the negative values of censorship (Gaines, E.J., 1968). Technology is not ethically neutral, and information value is subjective, depending on a situation (Berry, J. J., 1987b).

The 19th century concept of censorship was based on W. Learned's assumption: "when in doubt leave it." It was opposed in theory, but at the same time it was considered a way of preventing moral deterioration by withdrawing censored material from circulation. In the 20th century libraries advocate freedom of information but maintain indirect censorship by devices such as fiscal control and restricted circulation policies (Stielov, F., 1984).

There is a misunderstanding between the two principles: (1) the action produces the greatest good for the greatest number of people (J. S. Mills); and (2) the deontological argument that right action is determined not by its consequences but by principles of justice and duty (Kant. W. D. Ross). Thus censorship is undesirable because of its consequences or because it violates the rights of self-expression. Right action is more important than its utility, and not all that is right is also desirable. Librarians should support the consequential argument against censorship, acknowledging, however, the right of the public to question the content of library collections that are supported by public taxes. In the U.S.. the argument for intellectual freedom is stronger than the consequential assertion (Ward, D. V., 1990).

### 3.5 Classification and cataloging.

#### 3.5.1 Metaphysical definitions.

Library classification is based on metaphysical theories of reality and logical systematization of book contents (Graziano. E. E.. 1955). The object of classification is to identify structural differences and similarities among individual concepts without compromising them (Broadfield. A.. 1946). In the classification of knowledge pre-scientific presuppositions are influenced by genetic, social, and personal factors. Scientific presuppositions consist of metaphysical premises and serve as departing points for scientific research (Meijer. J. G.. 1991).

Classification is not an entity but a mere empirical equilibrium of divergent forces obtained by compromise (Butler, P., 1931); both classification and subject analysis are not ends in themselves, but means to provide readers with needed information (Foskett, D. J., 1964a).

The principles of classification of intellectual history address the analyses of parts of books to facilitate their retrieval, rejecting the consideration of a book as a unit in hierarchical classification by genus and species (Robanowice, R. J., 1975).

In cataloging, sociological philosophy stresses proficiency and purpose of cataloging processes related to goals of parental institutions and adjusted to their changing needs (MacPherson, H. D., 1939).

### 3.5.2 Epistemological characteristics.

The universe of knowledge is a changing continuum requiring constant revision of classification to find and enumerate basic categories and possible fundamental types of relations between them. Representation of knowledge is obtained by permutating the categories and relations (Ranganathan, S. R., 1951).

The classification of knowledge requires acquittance with its total environment and understanding of the principles that define its scope (Gregory, L. H., 1959). Retrieval of graphic records relates directly to the way knowledge is analyzed, arranged in a classificatory systems, and adjusted to the expanding range of observed phenomena by providing flexible and comprehensive correlations (Perry, J. W., 1956).

A classification system performs three distinctive functions: (1) bibliothecal, arranging the physical location of items within a library, (2) bibliographical, organizing recorded knowledge within the documents, and (3) cognitive, focusing on identity of items interrelated within other items (Nitecki, A., 1988). The classificatory systems created by Harris and Dewey are based on Hegelian philosophy (Graziano, E. E., 1955).

The information explosion made classification schemes obsolete and also rendered inadequate the conventional interpretation of science, research, and their theories (Bennett, G., 1988).

Major processing changes in cataloging include a number of shifts in focus (1) from bibliographic to descriptive cataloging, (2) from the absolute to contextual truth, (3) from the idealistic concept of cataloging as an end in itself to a pragmatic evaluation of its consequences.

Cataloging rules emphasize the importance of the sufficiency of general cataloging principles (Gallagher, H. M., 1991) and are adjusted to local needs, not influenced by preferential, individual judgment; they aim at simplicity, clarity, and economy (Dunkin, P. S., 1973). The structure of the library catalog relates to the patron's knowledge of the subject searched and his understanding of library organization of recorded knowledge (Kochen, M., 1974a).

### 3.5.3 Valuational assertions.

Classification of documents is librarianship's major contribution to civilization in that it provides index and location to an ever-increasing number of records (Shores, L., 1958); together with information retrieval, they are useful as service and as methodology for other disciplines. As a facilitator in communicating information, library service is based on the value of dispersible character of information, methodology of facet classification, and techniques (Davies, R., 1981).

The shift in cataloging concepts from a perfectionistic to a pragmatic approach resulted in a change of focus from quality cataloging to its impact on library goals (Gallagher, H. M., 1991).

### 3.6 Communication.

### 3.6.1 Metaphysical definitions.

One of the purposes of communication is to convey ideas through patterns of sound or physical marks by evoking in the mind of the receiver of communication the ideas that correspond to those in the mind of the initiator of that communication (Nickerson, R. S., 1981).

The principles of communication theory address: (1) numerical relations between physical processes and what they intended, (2) statistical relations between information and its transmission as measures of uncertainty, and (3) noise, an uncontrolled event minimized by repetitions (Fairthorne, R. A., 1961).

An idea is not a metaphysical entity but a hypothesis formulated to solve a problem, 'if X, then Y' (e.g., if a library displays a book, it will be read by more people). Communicating ideas means communicating untested hypotheses (Levine, M. M., 1981).

### 3.6.2 Epistemological characteristics.

Informational society began with the invention of writing, collection and comparing of written records, and a library serving as an essential instrument in the communication processes (Traue, J. E., 1989).

Language developed in response to communication needs (Mead), as a chain of conditional reflexes (Skinner), or independently of any social needs for communication as a means for survival in an unpredictable environment (Miller, G. A., 1983b).

Major influences on communication were: (1) the absolutism of the 16th and the 17th centuries, (2) the libertarian rationalism and natural rights of the 18th and 19th centuries movement and (3) 20th-century social responsibility on one hand, with totalitarianism on the other. Libertarian theory calls for dedication to truth and objectivism: totalitarian theory uses communication to 'educate' people (Berninghause, D. K., 1972b).

The contemporary cultural revolution is a converse of Darwinism, as the cultural evolution in time (focus on information science) and in space (librarianship) (Blake, M. L., 1985).

Library communication differs from conventional communication patterns. It is presented as a threefold modality of a discourse interrelating the physical objective reality of the message, communicated through its carriers with the conceptual, subjective reality, perceived by the recipient of the message (Nitecki, J. Z., 1979b).

Communication means more than just moving information; information technology is not a message: form is not a content;

the destination is more important than means of transport: electronics will not record compassion, and satellites will not communicate tolerance (Foskett, D. J., 1984).

Communication science is in search of a discipline: it is characterized by: (1) ethnocentrism, (2) self-contradictory conclusions, (3) a holistic approach to social and political cause-effect influences, (4) information retrieval predicated on inductive prediction of relevance, and (5) and heuristic method (Dervin, B. & M. J. Voight, 1984).

Library communication is limited by its one dimensionality and linearity (one theme at a time), its visual form (repetition not redundancy), its information threshold, its recall and its relevance. Information is communicated between two brains (of sender and receiver) and can never be fully retrieved by any system (Line, M. B., 1968).

The art of interpersonal-communication research is based on books, readers, and systems (Vickery, B. C., 1970). Words are the common medium of exchange, representing ideas, but are not themselves ideas (Anderson, H., 1957).

Conversation as an interactive communication between the user and the intermediary in the information-retrieval process implies: (1) a cooperative principle of conversational logic based on quantity of information (Paul Grice), its quality (true contribution), relations (relevance), manners (perspicuous), and (2) various theories in linguistics (Chomsky), linguistic logic (Lakoff's study of meaning), sociolinguistic interaction, cognitive psychology of the environmental and computational nature of language (Belkin, N. J., & A. Vickery, 1985).

Interactive communication is an important aspect of science considered as social science. Librarians ought to understand the present information requirements of individual scientists and anticipate their future needs. This applies especially to the scientific community for which the library can analyze information flow or use and generate information synthesis (Garvey, W. D., 1979).

Future society will evolve away from the formal communication patterns of the present. Paperless electronic communication will replace the library that is taken for granted in a print-on-paper format (Lancaster, F. W. & L .S. Smith, 1978).

### 3.7 Collection. Cooperation. Networks.

Although library collection is essential in librarianship, the discipline still lacks a satisfactory means for relating it to its use. The accessibility and availability of collections must be matched with their users` satisfaction (McGrath, W. C., 1985).

Division between access and ownership of resources should be put aside and the two issues addressed jointly, by cooperation between them. Librarians, publishers, and utilities operators should solve together the problems created by this dichotomy (Hoadley, I. B., 1991).

The cooperative role among libraries is based on the assumption that cooperation will provide more effective and efficient library services (Grundt, L., 1975). Philosophical principles of cooperation (working together for common objectives or to produce desired effects) imply sharing goals and coordinating common actions and attitudes. Cooperation is a means toward ends, distinguishing between activities and their objectives (Pond, K., & D. E. Buringame, 1984).

Resource sharing is a good regulating device in library collection, based on the notion that books that are lent to other libraries are in low demand and should be kept in the borrowing library until they are requested by another lending library (Gore, D., 1982).

Networking does not save money, break down bureaucracy, or eliminate barriers between libraries, but it simplifies and improves operations (Schuman, P. G., 1987). And although it will reduce the value of local library collections, it will increase the value of librarians; it will link people to information anywhere, but it will also isolate individuals physically (Carter, C. R., 1982).

## 3.8 Data-information-knowledge relations and transfer.

### 3.8.1 Metaphysical definitions.

Data, information, and knowledge are different stages of the same continuous process of integrating data to the already existing knowledge in an individual's mind (Nitecki, J. Z., 1984c). Definitions of data, information, and knowledge should distinguish between the levels and purposes of such definitions.

the content in which the terms are used, and the roles they perform in a social setting (Wilson, T. D., 1981).

The datum is a statement, information, or a content; knowledge is a store of patterns and structures, comprehended by and integrated in people's mind (Bretz, R., 1971).

Knowledge is considered as a psychological content of a mind, new relations in logic, a source and validity in epistemology, its ultimate nature in ontology, and its arrangement, recall, preservation, and restoration in library classification (Ranganathan, S. R., 1951).

The concept of unified knowledge was expressed by a number of writers. Leibniz searched for universal and encyclopedic knowledge. Jawett, Sayers, and Ranganathan focused on universal bibliographic description and classification without using the scientific approach. Kochen proposed unification of knowledge based on wisdom. Shera suggested symbolic interactionism in social communication. Patrick Wilson focused on bibliographic research aiming at practical processes (Reyward, W. B., 1983b).

3.8.2 Epistemological characteristics.

In a triad 'data-information-knowledge' each component relates to different aspect of cognitive processes, and each is defined differently in different contexts (Machlup, F., 1983). Data may be social, scientific, humanistic, or mainstream with different meaning and use (Geraci, D. & L. Langschied, 1991). They are measured at four levels: (1) the entropy of answers, (2) weighted entropy in selection, (3) a syntactic and semantic measure of structuring, and (4) a dimensional reduction of data themselves (Hayes, R. M., 1991).

Data are considered unprocessed, given raw facts (empirical foundationalism), different from their derivative (indirect Rralism), or physical surrogates for knowledge (physicalistic reductionism). To be compatible, data and information must be of the same kind; to be accessible, they must be representable; and to be processed, they must lose the property of rawness (Hammarberg, R., 1981).

Knowledge is an awareness of reality, information is recorded knowledge, and data are unprocessed symbols. A diffusion of knowledge into social systems is influenced by: (a) a source of information, its credibility, trustworthiness and attractiveness: (b) the recency of communication: the kind of message communicated and the intelligence of the audience; and (c) unintentional social factors, such as behavior of other people and deindividualization which weakens the restrains against antisocial action (Newhouse, R. C., 1988).

Soviet writers distinguished among (a) knowledge as a reflection of society (a philosophical view), (b) a pragmatic approach (focusing on system's behavior), and (c) a semantics of text (Belkin, N. J., 1975).

Communication as an information process consists of sender-message-medium-receiver sequence, with a message received through information transfer. Common to all information processes is: (1) information engineering (designing the system), (2) information managements (setting mission, policies, and procedures), (3) information psychology (studying behavioral processes), and (4) sociology of information (studying information context) (Greer, R. C., 1987).

Information is a language vehicle of communication; data and precepts are sorted by brain into knowledge about reality, subject to constant change and verification. Information as a surrogate for knowledge interprets experienced phenomena and provides a reference points for knowledge (Farradane, J., 1981).

Librarians do not organize knowledge but classify it; information and knowledge are not physical entities; bibliographic information retrieval maximizes the probability of recalling a relevant document -- all are highly subjective practices (Brookes, B. C., 1982).

Information transfer is an interaction among users, knowledge, resources, and intermediary mechanisms (Belkin, N. J., 1984). The transfer of information to information theory is determined by the kind of research, time parameters, and levels of investigation (Stanoulov, N., 1979).

Value judgment of information transfer is based not on values inherent in the message, but on the receiver's perception of potential values, determined by information needs and the environmental factors (Nitecki, D. A., 1993).

## 3.9 Information Technology: Inquiry, search, transfer and retrieval of information.

### 3.9.1 General comments.

Information technology went through three revolutions: the invention of writing, the introduction of movable type, and the development of electronics. Each gradually increased the access to a variety of information. (Neustadt, R. M., 1981). The inventions of printing and the computer were major cognitive changes, democratizing technology by increasing accessibility to information. Printed books eliminated transcribers' errors, and computers allowed for manipulation of information. (De Mey, M., 1984). New technology creates new sociological and psychological crises, but it also provides the means for resolving them (Curras, E., 1984).

The development of environmental information services is related to one of the three modes of scientific and technical information transfer: (1) discipline-oriented (focus is on the total universe of knowledge), (2) mission-oriented (focus is on specialized, interdisciplinary knowledge), and (3) problem-oriented (focus is on social issues) (Neufeld, M. L., 1982).

Technology offers means for individualizing educational processes: the insight into technological operations provides understanding of how it can be controlled to serve society (Minnesota Educational Media Organization, 1985).

Technology is not a linear process; it will change some aspects of librarianship, but will not eliminate it. The library, in addition to providing ready-made information, also makes available personal knowledge (enlightenment) that cannot be computerized. Research as a cumulative process limited to the latest information is applicable to natural sciences, while the humanities and social sciences express human values; hence literature is not obsolescent. Non-routine use of information requires creativity, which cannot be classified in advance, thus the fundamental problem of information retrieval is unsolved (Larsen, S., 1988).

Numerical calculations were older than Babbage's desk calculator, and they were followed by Bush differential analyzer (Fairthorne, R. A., 1969). The procognitive model based on a dialogue between a user and the system anticipated the present expert system (Licklider, J. C. R., 1965).

Technology has both positive and negative impacts on society. It stimulates the processing and use of information, but it also erodes the fabric of human society by magnifying social alienation (Voloshin, M., 1988). Its impact on librarianship includes: (1) increased publication and concomitant pressure on library processes, (2) facilitation of a storage problem by computers, but also increasing cost of operations, and (3) integration of library services with parental organization, strengthening libraries' ability to compete with commercial agencies (Cummings, M. M., 1986).

Technology offer means for individualizing educational processes, and the insight into technological operations provides understanding of how it can be controlled to serve society (Minnesota Educational Media Organization, 1985).

New technologies significantly changed library activities in (a) storage of records (changed formats), (b) their distribution (electronic devices), (c) technical processes (computerized), and (d) bibliographic tools (computer catalogs). These changes

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made the library completely interdependent with other information institutions (Haas, W. J., 1988).

A historiography is a graphic display of citation data that show the key scientific events, their chronology interrelationships and relative importance. It serves as an outline for a history of a discipline (Garfield, E., 1973).

Typographical fixity is a basic prerequisite for the rapid advancement of learning, illustrated by changing reading habits and the introduction of reference services that followed invention of printing machine and duplicative services (Eisentstein, E. L., 1968).

The philosophy of operational research is based on a dictum that philosophy of science without history of science is empty, while history of science without philosophy of science is blind (Miser, H. J., 1991).

The library environment reflects a conflict between technocrats, who enthusiastically endorse innovations in libraries, and Luddites who violently oppose it. The conflict can be resolved by redefining the scope of the discipline and its mission (Ennis, P. H., 1962).

Post-industrial society is characterized by (1) conflict between elitist techno-economic structure and populist culture, (2) a cultural shift away from reading to a visual format, (3) the significance of computers' impact on information-manipulation, (4) an information-dependent society, and (5) the nature of the library's change from a passive storage center to an information and knowledge center (Musman, K., 1978).

Evaluation of technology can be (a) quantitative macro-evaluation of the efficiency of system performance, and (b) analytical and diagnostical micro-evaluation of reasons for satisfying information needs. Bibliometrics moves away from subjective-use studies by concentrating on past user behavior, reflected in the frequency of citations (Lancaster, F. W. & C. Cleverdon, 1977).

As a result of new technology, the library may become (1) a user-subsidized warehouse providing seating facilities, (2) a computer-centered switching system, or (3) a symbiosis of people and communication systems, providing mediation between users and knowledge in and outside of a library (Taylor, R. S., 1973).

The adoption of new technology is not yet reflected in the philosophy of user services. The self-service model is still in use, with patrons using the library for information and service delivery only (Summers, F. W., 1991).

Librarians demonstrate a lack of interest in adapting the electronic book, although it will become the future carrier of information; electronic publishing should be influenced by library related needs (Robinson, C., 1992).

### 3.9.2 Artificial intelligence.

Intellectual issues are created by a complexity of scientific beliefs which polarize intellectual communities. For example, among the dichotomies impacting on the development of artificial intelligence are (a) a shift from symbolic logic as a thinking process to a device for mathematical analyzes, (b) a distinction drawn between nature of knowledge (epistemological) and the process of implementing it (heuristic). and (c) the separation of philosophy from empirical studies and psychology from philosophy (Newell. A.. 1983).

### 3.9.3 Automation.

It is important that librarians give more attention to automation dedicated to the social significance of libraries and reading (Simpson. D. J.. 1963). Automation changed librarians' focus: from logic and reason as irrelevant, to logical positivistic operationalism (machine-manipulated acts). Librarianship becomes dehumanized by a shift from a man-centered to a machine-centered mode of operation (Grazziano, E. E., 1967).

We see deficiencies in libraries but do not know their hidden purposes. hence we should not automate what we don't understand (Line. M. B.. 1968).

### 3.9.4 Computers and computer science.

The computer is used for (1) bibliographic control. (2) document reproduction and distribution. and (3) information retrieval. The knowledge explosion refers to utilitarian knowledge, while the technical focus is on productivity (Martin, L., 1968). The computer accelerates cognitive processes and augments them (Zwass. V.. 1983).

Computers are ignorant: they can differentiate but not interpret. Until instructed how to do it. they can hardly identify data (Fairthorne, R. A., 1973).

Computer science is not a physical science and has little to do with computers. It develops large, manmade systems designed to control complexity by reducing a number of interconnections (Moses, J., 1983). It overlaps with information science in the artificial processing of information; it also relates to other disciplines by providing conceptual models, sharing areas and methods of inquiry, and influencing computers in practically every discipline (Zwass, V., 1983).

### 3.9.5 Information inquiry, search, and retrieval.

The major problem in information science is how to know in advance if the desired information or knowledge exists and can be retrieved (Fink, D. G., 1976).

Information inquiry is serendipitous; each inquiry is unique, evaluating one document at the time, with previous evaluation affecting the following inquiry (Carr, D., 1981).

Analysis of the subject content of documents identifies search possibilities; synthesis of the retrieved documents confirms the degree of completeness of the retrieved processes (Friis-Hansen, J. B., 1986).

Searching processes for information in library collection and in the educational processes are constrained by a limited rate of information flow into human sense-channels (Heilprin, L.B. & F. L. Goodman, 1965).

Information retrieval is a tool of recorded discourse, but it does not take part in discourse itself. It is evaluated in terms of the accessibility of documents and the sucess of librarians' assistance (Fairthorne, R. A., 1968). It consists of four stages: (1) monadic (information is a self-contained entity), (2) structural (information is a classified complex structure),

(3) contextual (information removes ambiguity), and (4) cognitive (information is a knowledge representation) (Ingwersen, P., 1984).

Scientific information retrieval is based on the assumptions that: (a) it is cognitive (information is mediated as a system of categories and concepts), (b) common knowledge structure is provided by the paradigm theories, and (c) Popper's physical-subjective-objective worlds are interactive (Ingwersen, P., 1984). Information storage and retrieval influence methods of creating and managing records by facilitating recovery of all pertinent records (Lipetz, B. A., 1966).

The 'transfer coefficient' expresses a need for measuring the objective reality of the output of the system to the users' perception of what is relevant. Relevance of information retrieval may be pertinent but not necessarily useful or significant (Kent, A., 1977).

The psychology of learning and memory can assist librarians in organizing their material by suggesting that: (a) retrieval strategy is similar to retrieval from memory, (b) there is a maximum amount of information that an individual can handle at a time, (c) information should be organized by its complexity, and (d) unrelated words are sorted into categories (Najarian, S. E., 1980).

The modern scientist is not a scholar but a researcher who depends on the access to information (Daniel, E. H.,1982). An effective information-retrieval system depends on an active partnership between an information scientist and a subject expert. It is based on the assumptions that: (1) knowledge is dependent on knower and social context, (2) a retrieval process involves shared understanding between the librarian and the patron, and (3) an adequate index allows the patron to develop his/her own perspectives (Watson, L. E. *et al.*, 1973).

The ambiguity of the concept 'relevance' rules out a satisfactory evaluation of information retrieval. The irrelevant document may stimulate new research, and trial and error may enhance the correctibility of the requests. Hence the meaning of relevance is in the context of the documents served (Swanson, D. R., 1976).

Knowledge can be public yet undiscovered because of an incomplete retrieval system, increasing the scope of published information and limited indexing. Hence, information retrieval is always uncertain and openended (Swanson, D. R., 1986).

The improved controllability of information results in improved capability for computation, storage, and telecommunication of information. At present, information retrieval is limited to the retrieval of documents only (Koenig, M. E. D., 1987).

### 3.9.6 Systems.

A philosophy of systems deals with problems centered on the concept of the system, and it is distinguished from system theory, which is a science of systems based on mathematical interpretations (Mortazavian, H., 1983a).

A system is an ongoing process: a modern system is also information based. What is important, however, is not so much the information processed, but the information about what is processed. The new library system is information-based, controlled by information-processing computers, aiming at efficient information retrieval for patrons (Kilgour, G. G., 1966).

Systems theory, although not formally stated, was already practiced by Romans and medieval libraries in a form of dissemination of knowledge through systems of networks. Today's library system is similar, although more complex, fulfilling the same essential function as a cultural base of society (Smith, J., 1977).

An information system is a special kind of relation between input and output. It cannot be modeled without adequate information about the inputs, outputs, locations, and processing of books in libraries. There is no theory to determine what is the minimum amount of information needed in the model (Mortazavian, H., 1983).

An expert system is interpreted as: (1) data bases (facts), (2) knowledge bases (rules for comparison and interpretation), and (3) an inference engine (action taken on situation-specific facts). Natural language interface permits human operators to communicate with a computer. Both the expert system and the computer are major components of artificial intelligence (Mason, R. M., 1985).

A systems approach to library management ignores the service aspect, although service is the main reason for librarianship (Wenge, K., 1982).

### 3.10 Neutrality.

### 3.10.1 Metaphysical definitions.

The meaning of neutrality is determined by its historical context (Birdsall, W. F., 1988), and partiality for or against something is defined in the social frame of reference (Berelson, 1939).

Neutrality reflects reality and opposes censorship (Gore, D., 1969), and it breeds political inequality (Gremmels, G.S., 1991).

### 3.10.2 Epistemological characteristics.

Berninghauser's hypotheses distinguish between librarians' non-involvement in professional issues and their involvement as citizens. This is criticized by contending that librarians as members of society are directly involved in fundamental social issues. The former approach reflects 1940s - 1960s 'identity-through-vocation' syndrome. The latter reflects social consciousness, the 'identity-through-social responsibility' syndrome (Dunbar, G., 1972).

The proponents of library neutrality argue that the very concept of a librarian as a social advocate contradicts American tradition. Free access to all ideas implies a collection and services that refer to all issues, pro and con (Oboler, E., 1977).

Librarians as librarians can have no religion, no politics, and no morals. The library must be impartial, open, available to all, objective, and enthusiastic about the public's use of its resources and services (McColvin, L. R., 1949). This principle allows librarians to exist for all politics, all religions, and all morals (J. D. Cowley in: Foskett, D. J., 1962, Emery, R., 1971).

Library service is directional; it points to the sources, but does not provide answers, i.e., it is neutral (not judging or interpreting the values of the sources). However, it is responsible for providing real and correct information (Fayen, E. G., 1986). Neutral questioning strategy in reference is to find out what the patron wants, based on the sense-making model (Dervin, B., & P. Dewdney, 1986). Librarians as professionals should not take a stand on social issues that are unrelated to librarianship (White, H. S., 1990).

The librarian's mission is the problem-centered duty to provide material which for the sake of offering information to all, may offend some patrons and even some librarians (Gore, D., 1973). However, involvement of the public library in solving social issues changes it into different institution (Becker, H. S., 1965).

Neutrality is often interpreted as a "do nothing" attitude. The dilemma is in distinguishing between patrons' perceptions of what they want and what they really ought to have (resulting from patrons' lack of information about the material wanted) (Carnovsky, L., 1940). Partiality implies proper advice based on known facts (Berelson, B., 1939), but it also is seen as (a) an undemocratic mistrust of an individual's ability to make his own decision, by affirming the finality of any argument (Fry, B. M., 1939); and (b) as a choice negatively made, based on misinformation and insufficient awareness of social change (Scandrett, M. S., 1939).

On the other hand, many librarians oppose neutrality. In a pluralistic society, the concept of library neutrality contradicts librarians' obligations to serve all people and provide them whit what they want by selecting only the material restricted by community standards (Prokop, M., 1983).

The opposition to library involvement in social issues is considered as 'reactionary, hypocritical, and intellectually unsound' (Buschman, J., and others, 1994).

Originally people did not want to be told what to read, expecting librarians' neutrality; today they ask for guidance in the choice of material relevant to their needs (Hatt, F., 1963). Librarians are never neutral but always impartial. Neutrality implies no position on basic ethical issues (Foskett,J.D., 1962).

The nature of library service requires politization of library involvement, especially in the area of freedom of information (Green, L. V., 1991).

Aristotle maintained that inequality arises when two equals are treated unequally, or when two unequals are treated equally. This implies that some people may be more equal because of their political power. This prevents the library from being neutral in disseminating survival information effectively, since politics often determines who gets what (Hennessy, J. A., 1981a).

Librarianship of politics and politics of librarianship are closely related, operating within the state and community environments. Both are essential for the survival of libraries (Hennessy, J. A., 1981b).

A nonpolitical approach weakens public support of library services (Shavit, D., 1986), and library neutrality means support of the established order (Mole, A., 1979). Furthermore, emotional neutrality in dealing with patrons weakens librarians ulterior motives and results in their disinterest in the outcome of information transfer (Smith, G. M., 1973).

Some philosophers feared written words (Socrates, Plato, Ortega). Librarians should follow skeptics' philosophy of accommodating all dogma but acceding to none (Gore, D., 1970).

Some suggest that involvement in social issues should be limited to the areas of librarians' social responsibilities defined by library goals and objectives (Uricchio, W., 1994).

The debate also relates to the principles of intellectual freedom requiring full access to records (Berninghousen, D.K., 1972a) and involvement in social issues by providing access to all viewpoints. Intellectual freedom is a major library principle, although it is sometimes criticized for excusing neutrality, thus in effect supporting the establishment (McKenny, M. & E. Ericson, 1972). Does the meaning of the principle of intellectual freedom cover all viewpoints, including politically incorrect? (Manley, W., 1993).

The resolution of the neutrality-advocacy controversy will determine the future of the philosophy of librarianship (Berninghausen, D. K., 1972a).

### 3.10.3 Valuational assertion.

Deontology emphasizes professional obligations to the institutional objectives, aiming at the library ideal of impartiality in serving a pluralistic society (Iben, I., 1962). Others claim that professional neutrality is irrelevant, since librarians deal with the values of others, not their own (Goode, W. J., 1961).

Political involvement is guided by a moral framework of values (Crowe, L., & S. H. Anthes, 1988). Value-neutrality invites political intervention and partiality (Blanke, H. T., 1989) and may result in a domination by other political and economic powers. Librarianship must define its values in political terms, by cultivating the sense of social responsibility to provide free and equal access to information (Blanke, H. T., 1989).

Librarians are not neutral; they just suppress their feelings as an act of ethical discipline. They should not take a stand on social issues unrelated to librarianship (White, H. S., 1990).

## 3.11 Management.

### 3.11.1 Metaphysical definitions.

Management is an amalgam of many disciplines. It consists of form and function, a community context, a normative expectation of action, an open-ended management style, humanistic values, a predetermined and hierarchical operational model, a participative approach, and technical and interpretational skills (Hannabuss, S., 1988). Its definition includes: (1) a process aiming at accomplishment of common goals with available economic resources, (2) staffing, (3) planning, (4) controlling, (5) a system of authority in decision-making and in determining job structures, and (6) leadership (Massie, J. L., 1987).

The conceptual framework of management consists of understanding attitudes in communication and common sense in the interpretation of relations, by using a descriptive rather than a prescriptive approach (DeHart, F. E., 1979).

Library management is based on either responsive or demonstrative philosophy, illustrating the diversity and divergence between innovative and traditional interpretations of the discipline. The responsive approach is the catalyst for change; and the demonstrative approach preserves the status quo (Webb, T. D., 1987).

### 3.11.2 Epistemological nature.

Major changes in American culture were agricultural, manufacturing, and service-oriented; all still have an important impact on the culture. Management of information serving all the above segments of society is difficult to define because value of information is subjective, situation- and time - dependent; and its 'value-added' component is difficult to measure (Duncan, J. W., 1988).

Major themes in library literature discussing library management include: (1) the formal character of library organization, and (2) informal management of staff performance.

Bureaucracy and professionalism are similar in requiring impersonal detachment, competence, and application of standards. They differ in bureaucratic authority by focusing on official position rather than on skill and competence, and by professional authority stressing expertise, abstract knowledge, self-governance, professional standards, an ethical code, and service orientation (Lynch, B., 1979).

Management of libraries relates to general theories and procedures for constructing the work of organization. It is based on sociological and psychological studies of human relations and motivation (Rosenberg, J. A., 1994). It is not an end in itself. Librarians should be competent and sensitive to changes and perform educational functions by utilizing available resources (Hookway, H. I., 1974).

The library is administered hierarchically, not by subject. It defines librarians and library units by their functions, a system which is necessitated by a large single catalog. The introduction of computers will result in change in library structure to the matrix organization and, in small libraries, to participative management (Altman, A. E., 1988).

Participative management is an ill-defined concept of power-sharing with employees but only partially sharing responsibilities (Dickinson, D. W., 1978). It is a delegative process, which at times abdicates managerial responsibilities. Consultative management is based on employees' input into managerial decisions. Some library managers follow either of these approaches with no resources or plans for success; the result is liberal management, which allows employees the freedom to choose their own style, as long as the outcome is acceptable (White, H. S., 1985).

A library management system consists of object-handling services and data-handling systems. Both are interrelated in an information system, which is responsible for the generation, collection, storage, manipulation, and delivery of data (aiming at simplicity) and objects (books focusing on convenience) (Heiliger, E. M. & P. B. Henderson, 1971). The object system includes (a) books' convenience, (b) processing of things about data, and (c) aiming at simplicity of numerical and alphabetical systems that convey complex and abstract ideas (Heiliger, E. M. & P. B. Henderson, 1971), and bibliographic tools (De Gennaro, R., 1982).

Librarians should generate political power among influential friends who will take risks on the library's behalf. They should ask for a broader constituency, making a library an indispensable institution in decision making (White, H. S., 1986). They should not become principal managers of all information, but continue to be a link between researchers and bibliographic tools (DeGennaro, R., 1982).

Political and social forces have a direct impact on planning, decision-making, and accountability; cooperation is admirable, but its difficulties are formidable (Beasley, K. E., 1974).

Management of information is a learning process. Important features are (a) the notion of organization and people's behavior, (b) the concept of change as a permanent state, and

(c) a reward system that requires information (Jellis, J., 1988). Information science should have its own theory independent of management theory (Diener, R. A. V., 1989).

There is anticipation of an increased competition between libraries (whose end-purpose is to serve published material to patrons) and commercial publishers (considering publishing as a means to business goals). Online access will increase direct author-reader relations, limiting the commercial market but also making difficult the evaluation of individual needs. The library's unique position lies in its direct service to an individual patron, and librarians should enter the scholarly publishing field in order to preserve that uniqueness (Atkinson, R., 1993).

Marketing principles are applicable to librarianship, because the library, by providing needed information, is involved in marketing it. Marketing is distinguished from selling: the former expresses the needs of patrons: the latter expresses the satisfaction of the seller or the librarian as a provider of information (Niekerk, R. V., 1985).

Marketing with strategic planning provides a practical and philosophical foundation for library information services. The shift in marketing is from selling to satisfying the client, and from profit to exchange. In the library a distinction is made between motivated library users and non-motivated non-users (Weingand, D. E., 1984).

Management departments in business schools lack a theoretical base; the notion of economics of information is proposed by considering information as a resource similar to land, labor, and capital, although its value depends on who uses it (information cannot be used up, but it can be obsolete) (Turner, J. A., 1986).

The philosophy of business-cost recovery contradicts libraries' free access philosophy. The computer lessens the disparity in the access to information between haves, and have-have nots, but it also increases the disparity between peoples ability to pay for that access (Blake, F. M., & E. L. Perlmutter, 1977).

Management measurement of library operations is affected by: (1) the difficulty of controlling users' behavior in determining library benefits, (2) the inappropriateness of social, spiritual, and economic benefits in measuring immediate library performance, (3) Ranganathan's laws that identify services to be measured, (4) Mooer's law stating that more difficult information retrieval will be less often used, and (5) the general law of diminishing returns, illustrated by the Zipf distribution law (in the text, a small number of selected words occurs most frequently), his principle of least effort, and Bradford's distribution law (Lancaster, F. W., 1977).

### 3.12 Media.

The philosophy of multimedia is defined as service to the public through accountability and enhancement of human life by effective management of resources of knowledge in the context of multimedia. Its purposes are determined by the functions and individual areas of activities; i.e., the purpose is translated into goals subdivided into measurable objectives of validity and feasibility (Hicks, W. B., & A. M. Tillin, 1977).

A pseudo-philosophical discussion of virtual reality does not contribute to the understanding of electronic media (Heim, M., 1993).

### 3.13 Reading.

#### 3.13.1 Metaphysical definitions.

Reading is a purposive, selective, and anticipatory process based on the comprehension and psycho-linguistic interpretation of written language, rather than a process of decoding of symbols. Readers are in control in the former interpretation, the text in the latter process (Smith, F., 1987). It is an interactive operation, determined by reader-text relations and the reader's knowledge of the book-subject read (Afflerbach, P., 1985). It can be (a) devotional (satisfying spiritual and emotional needs), (b) cultural (as a goal in itself), (c) achievemental (personal enhancement), and (d) compensatory (recreational): but above all reading is a means for communication. Public library function is not to spread knowledge but to develop personality by reading (Landherer, B., 1957).

It is a truism to say that reading is a unique unrepeatable process, expressing the meaning contained in the book and interpreted by its reader, which varies with different instances of reading the same material. It adds nothing to the understanding of the reading processes (Gerard, D., 1983).

#### 3.13.2 Epistemological characteristics.

Through history, reading was interpreted as: (a) an act of self-improvement (Protestant ethics), (b) a means for the diffusion of knowledge, and (c) as a source of information for recreational and educational purposes (Downs, M. W., 1969).

The meaning of a text is a metaphysical concept a composite image of various associations between signs, words, and thoughts (Nitecki, J. Z., 1986). It is extracted from reading and 'ready-made' in other media (e.g., TV) (Nell, V., 1988). A shift in the theory from 'word' to 'image' requires better understanding of the impact of new communication symbols on traditional concept of literacy (Gerard, D. E., 1975).

The reading processe varies: it can be easy (informational) or difficult to understand (technical); it can be learned structurally, analytically (from the whole to its parts), interpretatively, synthetically (from the parts to the whole), or critically (evaluating the meaning) (Dunnett, W., 1984). It involves three basic elements: (1) a process (the physiological and psychological science of reading), (2) the context (the sociology of reading) and (3) the content (the philosophy of thinking processes). Understanding the reading process is based on a model of brain divided into a foreground area, containing causal relations extracted from text (text-stimulated), and a background area (containing previously acquired knowledge). The two linked together produce trails of mental reasoning, called text comprehension (Corriveau, J. R., 1987).

A distinction is made between scientific and emotive reading (Richards), reading with or without purpose, general and serious reading (Savage), information retrieval, and storekeeping of reading material (Mills) (Hatt, F., 1961), differentiating among 'demand', 'want', and reading 'requirement' (Roberts, N., 1975).

Reading is not a skill but an experience, which is subject to biases: (a) 'of presentation' (learning focused on immediacy is often obsolete or false by the time something is printed), (b) 'of publicity' (publicizing private communications) and (c) 'of statistics' (one can measure quantity but not quality of reading) (Boorstin, D. J., 1982b).

The sociology of reading is an inseparable part of librarianship, studying social, political, and methodological aspects of reading processes (Karetzky, S., 1982).

Private awareness includes a sense of mission and belief in the social, economic, and personal utility of reading. Public awareness is an understanding of why reading skills are essential tools of leadership (Mathews, V. H., 1981).

The 19th-century metaphors of the ladder and of eating focus on active text and a passive reader. This focus should be reversed to stress relationships between active reader and passive text, with readers, not librarians, being the judges of the value of text content to them (Ross, C. S., 1987).

The 'eating' metaphor of reading is a simplification of reading habits and a caricature of relations between people and mass media culture. It focuses on consumption rather than production; people don't 'eat' mass culture as given, but modify it for their own needs (Radway, J. A., 1986).

Since people often don't know what they want, the librarian should use Madison Avenue techniques to persuade the patrons to read books (Parris, J., 1958).

School librarianship stresses the choice of reading needs by the individual patron, especially since reading is less important nowadays than in the past and has no absolute value; it must be related to individual needs for facts, to thinking processes, and to imagination,
which creates esthetic satisfaction (Dyer, C., 1969).

Plato was critical of writing because it offered information before a discourse (i.e., instruction did not precede reading). However, because of the expansion of reading material, verbal teaching (dialogue) must be supplemented by skills of finding and retrieving relevant reading material, which is the major goal of a public library (Gray, E., 1986).

Ease of reading accustoms readers not to think for themselves about the material they have read. Accordingly, librarians should serve as filters between readers and books by eliminating 'bad' books (Ortega, J. G., 1935).

Schools of literary criticism are based on different components of reading: (1) the Geneva School stresses reader reactions to authors' experiences; (2) the School of Practical Criticism focuses on text without reference to the authors' purpose, and (3) the New Reader School points to readers' expectations as they impact on the literariness of the text; the readers' response is the meaning of the text (Neil. V.. 1988).

3.13.3 Valuational assertions.

Esthetic response in reading is determined by the relationship between the text and the reader who brings to it perceptive and imaginative interpretation. It is stimulated by the text, and its reception or reaction depends on the reader's judgment (Iser. W., 1978). It is a dialectic relationship between the text and the reader and their interaction. It is also esthetic because it involves imagination and perception of values on the part of the reader (Iser, W., 1978).

The notion that the librarian ought to provide the reader with what he needs rather than what he wants is in conflict with the view that opposes superimposition of librarians' view on patrons, considering subjective service unethical (similarl to physicians' responsibility for choosing treatment for the patient) (Prokop. M.. 1983).

The significance and value of good reading justify government support of public libraries (Dewey. M.. 1898). It is important to defend ephemeral publications and their value in public library collections since current fiction will attract more patrons to the library. Reading does no harm and librarians should select books appropriate for patrons' needs (Putnam, H., 1915).

Reader-centered ethics stresses use of library resources as tools in providing cultural reading (Hatt, F.. 1961).

4.0 Professional issues.

## 4.1 General comments.

### 4.1.1 Metaphysical definitions.

The librarian's professional role is defined by the concept of knowledge involved: the role changed throughout history only to the degree of changing specialization (Winger, H. W., 1961). For example, the librarian's role in adult services is determined by a philosophy of adult education based on the democratic idea of self-education (Cushman, J., 1962). However, according to some writers, since a philosophical definition of librarianship does not imply a dedication to save human life, but books, librarianship is not a profession ((Levine, M. M., 1973). Humanistic librarianship is a calling similar to that of the physician's; it is dedicated to scholarship and service characterized by passion for books (DuBois, P. Z., 1979).

Library philosophy should address the library's role in the preservation and maintenance of democratic ideals, and in library relations to government. The library is a sounding board for community interests, and librarians are intellectual leaders, mediating community's conflicting wants and needs (Carnovsky, L., 1944). Mediation is a kind of intellectual engineering between subjects and bibliographic knowledge. The library's function is to 'maximize the effective social utilization of the graphic records of civilization'; it is a part of a communication system, and any theory of librarianship must be related to the interrogative communication system, as contrasted with a mass declarative communication in which a communicator chooses and communicates messages (Egan, M., *et al.*, 1956). Mediation also occurs between books and readers, with librarians acting as bookmen (Vickery, B. C., 1970).

### 4.1.2 Epistemological characteristics.

Library historians shifted their attention from fact-gathering to the study of librarianship in the context of library environment. The library role in democracy is to provide a meeting ground for poor and rich participation by voting in society's affairs, and to serve as a substitute for the town hall in political education (Ditzion, S., 1947).

The paradox of librarianship lies in the attention given to each individual patron's viewpoint, considering at the same time all patrons as one unit in collection-development policies. Simultaneous activism and neutrality are necessitated by a need to obtain adequate moral and administrative financial support.

## 4.2 Roles.

### 4.2.1 Roles of libraries and librarians.

The roles of librarians and libraries are viewed differently by different groups. To administrators, librarians contribute to the social structure of the community; to faculty, libraries are the depositories of research information supporting their own research; to librarians, libraries are storehouses of information important to their communities (Nitecki, D., 1993). The library's role in the community college is weakened by students' focus on testable data rather than on a coherent body of knowledge (Ray, D., 1989).

The librarian's role in promoting culture is affected by the relationship between the media and their cultural background (Burke, R. A., 1953) and the realization that not everyone is fully capable of benefitting from library services (Day, A., 1975).

In their role as book selectors librarians should be the literary critics in every area of learning (Holiday, S. C., 1939), providing clarifications to patrons on confusing issues (Gregory, L. H., 1959).

The educational role of librarians is evident in that they provide an environment for the patron's self-education and services that are more comprehensive and inclusive that those offered by other institutions (Henry, W. E., 1917). However, librarians are not teachers. Teachers disseminate knowledge through reading by interpreting the material's content or graphic records. The librarian disseminates the content of the records by processing and servicing them, not by teaching (Wilson, Pauline, 1979). The librarian's role is compared to that of a broker of resources (Hezel L. & A. R. Jacobson, 1987).

The librarian's function is to connect the right person with the right book, not to decide arbitrarily what to select for the collection, and not to be preoccupied with technology (Clayton, R. L., 1940).

Librarians are responsible not only for sharing resources with other libraries but also for providing directly material unique to their own patrons (Bryant, D. W., 1975).

### 4.2.2 Roles of reference librarians.

The primary role of reference librarians is to facilitate interpersonal communication between the library patron and themselves (Vavrek, B .F.. 1974); it is developed in stages. Reference librarians grasp the salient characteristics of many subject areas in general, rather than in depth (Faison, G. H., 1961).

The concept of personal assistance to patrons was introduced by S. S. Green in 1876; in 1891 the term changed to 'reference work', focusing on subject-requests only; by 1920 the reference librarian served as an intermediary between reader and book, focusing on understanding the reader's needs (J. I. Wyer); the invisible barrier between reference librarian and patron was discussed in 1966 (E. Mount); the negotiating approach was analyzed in 1968 (R. Taylor), and nonverbal communication in 1970. Dervin stressed an equal partnership between the reference librarian and the patron, determined by their perception of reality (Bunge, C. A., 1984).

The negotiating role of the reference librarian involves deciphering (a) patrons' visceral and unexpressed needs, (b) their conscious description of needs, (c) the personal characteristics of the inquirer, (d) understanding the relationship between the inquiry and library file organization, and (e) visualizing the anticipated answer (Taylor, R. S., 1968). Their functions are (1) skillful formal questioning, (2) 'mind-reading' of patrons' needs, (3) information-seeking negotiations with patrons, (4) focus on inquirers' own perception of reality, (5) the therapist role, and (6) a partnership with the patron (Bunge. C.. A.. 1984). The function is limited by the extent of the patron's surface information wants and needs (Wilson, Patrick, 1986).

The personality of the reference librarian is described in terms of Indian mystic philosophy: they should be sociable and helpful. capable of controlling their ego, and devoted to duty and integrity (Rahman, A., 1961).

### 4.3.3 Roles of special librarians.

The system professionals work with things, not ideas (Neill, S., 1980). The professional work of the Christian librarian provides a practical expression of justice, obedience, and Christian charity. His relations with patrons reflect impersonal intimacy and objective communication (Canfield, F. X., 1960).

Dissemination of information should be the function of a subject specialist (not a bibliographer) by providing reference assistance and advice. The present library organizes its records by topics, not by problems (Wilson, Patrick, 1973).

The Instructional Material Center is a school department. Its role is to provide curriculum-related printed and visual material for students and teachers, based on the concept of learning creative inquiry and understanding the nature of information needs (Taylor, K. J., 1968).

The philosophy of children's service refers to the intellectual scope of the services, which is broader than the content of children's books (P. Wilson), by extending it to the knowledge of society at large (Hektoen, F., 1982).

Library services to the underprivileged and poor are a part of the librarian's professional responsibility to serve the information needs of the whole community (Hendry, J. D., 1988).

### 4.2.4 The leadership role.

As custodians of the intellectual arsenal of democracy, librarians must provide active leadership in safeguarding and advancing the democratic heritage (Powell, B. E., 1960). The anti-intellectualism of American universities was created by activist faculty and students' demands for a pragmatic approach, carrier orientation, and focus on therapeutic sensitivity to students' demands for participation in university governance. The demands weakened the level of university scholarship and had a significant impact on the definition of the library's role in academe (Curtis, P., 1970).

### 4.2.5 The roles of the public library.

Education, economics, urbanization, and societal complexity were the primary factors in the development of the American public library. The modern period began in the second half of the 19th century, with the opening of libraries to the public, based on the liberal philosophy of J. S. Mill's self-help, philanthropy, and rejection of state interference. In the 19th century J. N. Larned's philosophy advocated material advancement, practical acquisition of knowledge, and spiritual advocacy of good literature (Ditzion, S., 1943). In the 20th century the focus shifted to technology, with libraries becoming laboratories of social change and negating political neutrality by involvement in politics (Gerard, D. E., 1978).

The motives for the development of American public library systems are interpreted by Borden as democratic, educational, and social, by Wellard as a function of philanthropy and the reform movement, and by Orman as economic demands for service (Wilson, L. R., 1936). Historical revisionism of that period points to its anti-intentional, anti-traditional, partisan, and ideological motivation (Harwell, R. & R. Michener, 1974). This viewpoint is rejected by other scholars who argue that the founding fathers of the public library movement were educated intellectual leaders of ordinary people, not populists; they followed 19th century belief in the willingness of citizens to transform self-interest into common good. The motive was neither elitist nor intellectual. American intellectuals of those days developed a populist philosophy based on a belief in the superior morality of ordinary people (P. Dain, 1975).

The functions and objectives of the public library must be interpreted in the context of its role in the community, the role that would justify governmental support but also assure libraries' own independence (Joeckel, C. B., 1933). The public library policy that should be of prime concern to librarians includes the study of obstacles to the librarian's role in spreading the use of information (Mayer, H., 1974). It should gradually divert recreational reading habits of its patrons from 'trash' to light literature (Fletcher, W. I., 1894). The values of public-library policies are often weakened by missions that are based on parochial interests of individual libraries (Oracio, L. V., 1983)

The power of the public library lies in its capability to enlighten patrons by making them aware of world realities (Garrison, G. J., 1934). Success or failure is measured by library growth or stagnation; the public library will disappear if it does not meet social needs (Shaw, R. R., 1967).

### 4.3 Library education.

#### 4.3.1 Metaphysical definitions.

Philosophy of library education is an integral part of culture and society, providing the base for library practice (Chisholm, M., 1975). Underlying that philosophy is a need for a fundamental course which would teach understanding of the information user, the theory of technology, and its application in practice (Woodward, D., 1988). Philosophy is often used as a synonym of the 'text' of documents that discuss library educational programs (Bunge, C. A., 1992).

#### 4.3.2 Epistemological characteristics.

One of the major influences on American educational philosophy was the instrumental thinking of John Dewey, which refers to knowledge gained from cooperation between individuals and their environment, and which can be learned by doing (Carlson, A. D., 1990).

Focus on library education developed from the 19th-century concept of equal education and promotion of public libraries. With the Supreme Court decision to eliminate racial segregation (1954) it shifted from providing equal education to its effects on students, questioning the original intent of the free school movement (Molz, K., 1979).

The function of the library school is not to impart narrowly defined skills, but to provide students with sets of criteria needed to perform their duties and to screen candidates that do not meet the requirements of the profession (Wasserman, P., 1969).
It requires understanding the distinction between: (1) intellectualism as a content (historical meaning) and as style (individual sensitivity), (2) education for content and for conviction, (3) knowing and feeling about right things, and (4) curriculum and sensitivity content. What is important is relevance, commitment, and belief in the social function of a library (Molz, K., 1970).

Major issues in library education are presented in the form of dichotomies: service vs. research, theory vs. practice, library needs vs. parent-institution interests, the generalist vs. the specialist, and issues of paraprofessionals, demographic representation of community, and comparative librarianship (Auld, L. W. S., 1990). They all demonstrate a need to examine traditional library educational philosophy in order to accommodate new technological changes (Williams, R. V. and M. J. K. Zacherts, 1986). However, recent changes in library education were not fundamental: some modifications followed the changing environment, affected by new technology, but not the sources of authority (Wiegand, W. A., 1986).

Social realities relevant to library education include: (1) the variety of librarians' social roles, (2) functions determined by social environment, (3) indoctrination, (4) the impact of information technology, and (5) reacting attitudes of librarians (Colson, J. C., 1980).

A distinction is made between training in the practice of librarianship and education in library objectives. In library schools, the faculty follows practitioners' preference for the former in order to secure employment for their students. Yet a number of years of experience is not the same as one experience repeated number of times (White, H. S., 1983).

Library education should be broad, reflecting the philosophy of the discipline. It is suggested that in an introductory course to librarianship, Plato's Republic can replace the traditional textbook, because of its timeless ideas and a system approach based on a dialectic method of question-answer analyses (Swigger, K. & F. E. Turner, 1986). The education should also concentrate on development, processes, and the perception of problems and library responses to them. The historical approach reviews the development of librarianship in an environmental context (Colson, J.C ., 1983).

Library education should focus on technical know-how. The foundation course should include purpose, methods, selection, technical processes, administration, basic information services and sociology of librarianship (Kunze, H., 1973); it should focus on decision-makers, not on technicians. Learning is a trial-and-error process with errors often providing the first step in learning the process of understanding (Neill, S. D., 1973).

An appeal is made for the study of classical library contributions to the discipline's intellectual philosophy. Sociology, which began at the same time as librarianship, has already built its theory based on historical roots, while librarianship is still searching for its own theory (Pierce, S. J., 1992).

A trading stamp mentality in library education is criticized for focusing on fulfillment of regulations rather than on the mastery of the subject, rejecting philosophy of librarianship as irrelevant to needs of practical librarianship (Stokes, R. B., 1967).

### 4.3.3 Library school curricula.

Literature on library school curricula is extensive. Here are some samples of what such a curriculum should include.

(a) In Librarianship.

The curriculum is based on a cataloging-selection-reference-administration approach, but should shift from 'how' to 'why', from techniques to philosophy. The ALA recommends inclusion of a core course that would contain knowledge (philosophy, social role, etc.), its environment, bibliographic tools, and skills (Daniel, E. H., 1987).

(b) In Information Science.

The list of subjects to be included in the curriculum is long. The two major areas are: (1) foundation of the discipline (basic concepts, information transfer), information retrieval, information-use behavior, information services, and training based on marketing philosophy (Browne, M., 1986); and (2) organization and retrieval of information, its environment, information media, systems and technology, evaluation of research methods, and information management that interrelates the above-named subjects in the context of patrons' needs (Taylor, R. S., 1977).

(c) In Library and Information Science.

The LIS curriculum should consist of (1) philosophy of librarianship as a framework for setting priorities and values systems for decision-making, behavior patterns in communication of information, theory of information transfer, organization and management of the information system, research methodology and study of different library functions (Grover, R. J., 1985); (2) the role of library information science in society, information-gathering behavior, theory and practice of information retrieval, and managerial, political, social and technical aspects of library services (Buckland, M.K. 1986); (3) library automation, information storage and retrieval, abstracting, indexing, thesauri, engineering systems, statistics, and interactive computer systems (Fosdick, H., 1978); (4) concepts (nature, role, education and research in information), theory (information retrieval, bibliometrics, recall, relevance, computer function, management, networks, and professional issues) (Davis, C., H., 1981): and (5) interdisciplinary curricula incorporating subject-matter of documentalists (1940), A-V (1950s), and information science (1960s).

The future of the curricula will be determined by the free market. The present trend indicates a change of emphasis from documents to in ion exchange. In future, research will have to focus o ormation-content transfer and interaction with users rrison, G., 1988).

Archival courses share the same principles with other subdivisions of librarianship, since they differ in techniques only. Focus should be on history of archives, appraisals, management and the archival description (Peace, N. E. & N. F. Chudacoff, 1979).

4.4 Professional status.

Professional status requires: (1) knowledge organized on abstract principles, (2) creation of new knowledge, and (3) control of all knowledge by the profession. Librarianship does not meet these conditions; its knowledge base of 'specialization in generalization' is insufficient, its function to 'reduce the anonymity of books' is not supported by scientific knowledge, and the librarian's knowledge is irrelevant to specialists in other fields (Goode, W. J., 1961).

Interest in professional status is characterized by (1) a focus on self-interest more than on professional responsibilities, (2) preoccupation with the medium, (3) patrons, not librarians, determining what is needed, (4) goals to maximize services which are not compatible with the overall interests of majority of patrons, and (5) a lack of uniformity in formulation of a professional philosophy of commitments (Bundy, M.L. & P. Wasserman, 1968).

Recently there has been a significant increase in discussions of the importance of the role of women in American librarianship (Harris, R., 1993).

The notion that automation was accepted to improve the professional status of librarianship is questioned, since the new technology was applied to the improvement of book processing and literacy (Berry, J. J., 1987c).

## 4.5 The critique of the profession.

Urquhart demystified library mysteries of operations, the mystiques of its technical jargon, ideas of perpetuity in providing collections for the future, and the notion of dependence on numbers (statistical interpretations). All these myths inhibit change, waste resources, confuse patrons, pollute research, and corrupt library education (Line, M. B., 1975).

Library education is criticized for its overemphasis on information science, for equating paraprofessional tasks with those of librarianship, for poor faculty quality and poor teaching (Gorman, M. A., 1990), and for teaching students archaic procedures with no relevance to a real world (Cohen, A., 1981). Librarians know how to get books to a reader, but not how to bring readers to books (MacLeish, A., 1939).

University administration criticizes library schools for: (1) isolation of the library faculty from other faculty in the university . (2) poor faculty, programs, and research, (3) lack of hard core courses, (4) poor definition of the discipline's scope and international relations, (4) overstress of professional issues, (5) teaching used as a substitution for research, (6) perception of library schools as unessential in the development of information science (Columbia University, 1990).

The personalities of many librarians are not well suited to the profession: they often suffer from inferiority complexes, are sociable, liberal, and non-rigid, but also resist technologies, social changes, and risks (Agada, J., 1984).

The three negative images of librarianship consist of the notions that (1) librarians are not masters of machines, (2) they have low self-esteem, and (3) their profession is characterized by bureaucracy, rigidity, formality, and precedents (McCrum, B. R., 1946).

The superficiality of librarians' knowledge is universal and inevitable, with superimposed special library techniques that do not make them scholars: scholarship can be achieved by librarians on their own time (Shaw, C. B., 1932).

The objection is made to the focus on philosophy rather than on practical skills: librarianship is only a tool in the pursuit of knowledge or information, nothing else (Plaiss, A., 1983).

The desire for professional status and the encouragement of patrons to achieve self-sufficiency in the use of library resources overrides the definition of the professional library purpose and results in deprofessionalization of librarianship (Birdsall, W. F., 1982).

The philosophy of librarianship is weakened by its professional image and unsatisfactory code of ethics (Gupta, R. K., 1969). Instead of useless discussions on library professional status, librarians should accept the indivisibility of knowledge and the need for its interpretation. Assuming that education is based on communication-computation-classification, librarians should focus on the ways computer can help in information storage and retrieval (Kyle, B. R. F., 1963).

## 5.0 Theoretical aspects of the domains.

### 5.1 Overall aspects.

### 5.1.1 General comments.

20th-century science will be remembered for: (1) the theory of relativity, which eliminated Newton's illusion of absolute space and time, (2) quantum theory, which did away with the Newtonian dream of controllable measurement processes, and (3) chaos theory which canceled the Laplancian notion of deterministic predictability (Gleick, J., 1987).

The function of intellect is to find order in chaos; the "strange attractors" (a noise in communication) conflate order and disorder, creating unpredictability, raising entropy and thus information. Energy at its macroscopic level can be measured: on the microscopic level it is contained in countless atoms swimming randomly, immeasurable. The two levels do not communicate with each other and represent chaotic systems. They are bridged by information, transmitted from one level to another through strange attractors, magnifying initial randomness, just as the butterfly effect magnifies small uncertainties into large-scale weather patterns. Order is ingrained in disorder (Gleick, J., 1987).

Many of the traditional interpretations of reality are revisited. For example, the Darwinian natural selection theory does not reconcile intellectual freedom with social responsibility. Hence, Piaget's theory based on information-seeking behavior as a primary mechanism in evolution, is more appropriate for theories in librarianship (Pansegrouw, J. G., 1990).

5.1.2 Metaphysical meaning.

Theoretical foundations for librarianship are based on the need to understand human nature and thought processes, paralleling developments in communication technology (Horowitz, R. G., 1988) such as indexing and classification of objective knowledge, based on understanding of human processes in problem solving (Neill, S., 1982b).

Presently, theoretical reasoning in library literature is philosophically inadequate, lacking full analysis of its various aspects (White, D. A., 1980): the inadequacy is illustrated by a confusion between metaphorically described concepts of (a) information and knowledge, (b) mind and computer, and (c) their real nature (Nitecki, J. Z., 1983b).

Five theories (ideologies) in librarianship are identified: (1) the conservative theory, an elitist and old-fashioned theory in which librarians are considered guardians and custodians of knowledge and culture; (2) the technocratic theory, viewing libraries as efficient delivery systems of information; (3) the liberal theory, considering a library as a provider of commodities for an individual patron; (4) the radical and pseudo-radical reactionary and anti-intellectual theories, replacing library elitism with popular culture, and (5) genuinely radical theories, critically evaluating social relations aiming at the elimination of capitalistic system (Mole, A., 1979).

### 5.1.3 Epistemological characteristics.

The impact of technology on library and information science, its philosophical assumptions, theoretical formulations, and practical applications are significant. Information policy will require the provision of equal access to resources, expanding circulation by incorporating other relevant disciplines; access and preservation will be improved and new theories focusing on technology-driven research and the patron's behavior will have to be developed (U.S. Dept. of Education, 1988).

## 5.2 Specific theories in LIS.

Theories of librarianship are based on integrated systems of measurable relationships, regularities, and laws between (among others) the contributions of publishing industry, library selection, and acquisition policies. Together with other variables they impact on storage, preservation, and classification of the collection, which are necessary conditions for library circulation (McGrath, W. C., 1994).

In this section a few selected theories are summarized to illustrate the nature of theoretical formulations in library information science.

### 5.2.1 Book selection and collection theory.

Book selection theory, as in the case of any other value theory, has descriptive and normative aspects. The former discusses the bases for actual selection decisions, the latter focuses on the alternatives that ought to be considered. Each selection involves quantitative, consultative, selective, documentary, and market values (Taube, M., 1941).

The general theory of book selection is based on literary criteria and reading needs, determined by sociological and psychological studies of reading impact on the reader. Consideration is given to: (1) readers (their reading skills), (2) publications (content and style), and (3) goals of reading (determinant of reading needs). Selection aims at a well-rounded collection (something on everything) and a match for the type of reader to be served (Goldhor, H., 1942).

Selection criteria must be based not only on demand but also on intended goals of the publications, their degree of meeting the requirements of a particular publication form, and its unique contribution to the field (Gerard, K. H., 1991).

Politics and philosophy of collection development changed from 1950s activism to 1980s skepticism about the governmental role, affecting the quality of collections and increasing demands for preferential treatment, forcing librarians to be more involved in public relations (Fletcher, J., 1983).

There is a need for sensitivity to the organization of knowledge, interrelated ideas, events, and other related elements -- all as factors in book selection (Stiffler, S. A., 1963).

Library collections ought to include opposite views, conform to scientific facts, and be compatible with human values. Librarians are not responsible for the ways people think, but are responsible for telling them what to think about (Monroe, M. E., 1962a).

It is a paradox to emphasize in collection development policies the library's service to individual patrons, considering at the same time all individuals as a uniform group (Foss, S. W., 1909): similarly, there is a conflict between the public library's goal of satisfying patrons's preferences as they are expressed in the popular culture and its own undemocratic preference in its book selection for high (quality) culture (Stevenson, G., 1977).

### 5.2.2 Culturalism of Butler.

Theories of librarianship must be concerned with scholarship and civilization, hence the library's working philosophy may be called "culturalism." Culturalism consists of physical equipment, social organization, and a system of ideas. Standards in librarianship include reading as its central activity and promotion of scholarship as its purpose. Scholarship may be empirical (demonstrative), oral (expressing verbal text), graphic (recorded in writing), analytical (from premises to conclusions), synthetical (producing common sense approaches), or intellectual (manifold awareness and inference). Its products are science, technologies, and concrete and abstract humanism (Butler, P., 1944).

Culturalism is an understanding of the nature of scholarship and its function in society. It involves: (1) appraising the library stance in the total civilization, (2) bringing all diverse library interests under one rubric, and (3) defining standards of scholarship that are formulated in the context of individuals as a member of a society, with the library assisting the individuals in achieving their goals (Butler. P., 1933).

Fallacies in standards of scholarship may be: (a) "of constants" (the monistic fallacy of identifying variables with one of its values), (b) "of convenience" (the operating fallacy of identifying problems with their solutions), (c) "of processes" (the mechanistic fallacy of identifying things with the activities that produce them) and (d) "of origin" (the generic fallacy of identifying totality with its components or end products with their origin) (Butler, P., 1944).

Poststructuralism is a form of cultural criticism that opposes the epistemology of positivism by questioning the sociology of knowledge in librarianship. The view assumes that there is no objective reality, only a reality socially constructed and determined by socioeconomic background and personal experiences. The focus should be on the selective interpretation of information from a non-conventional perspective, not affected by any specific economic or cultural dominance (Farmer, J. A., 1993).

### 5.2.3 Field theory (Harlow's adaptation).

Field theory is an approach in the philosophy of librarianship that refers to the generalized notion of the area in which all activities take place; its properties and structures explain all phenomena; its elements are arranged into "interbehaving" systems interrelating with the whole. The process starts with a situation as a whole, stressing organization rather than its parts. In librarianship, the "field" stands for existing knowledge and "information" is part of larger field of general knowledge, with subsystems of information, processes, and people interacting with each other. The approach includes: (a) generation, organization, and storage of records, (b) interface between records and users, (c) retrieval of information and its transmission, and (d) evaluation of output in terms of the user's needs (Harlow, N., 1969c). Philosophy of librarianship based on the field theory stresses a macro approach that interrelates various elements of the discipline in an organic whole (Harlow, W. N., 1969a).

### 5.2.4 Functional theory of Christ.

The functional theory of librarianship emerges from metaphysical philosophy and focuses on directedness of a total system in its historical contexts. The functional method is an analytical process, interrelating specific phenomena with an integral whole, based on two metaphysical assumptions: (a) every action has its functions, and (b) societies are well integrated, facilitating investigation of social systems and developing functional rather than deterministic relations (Christ, J. M., 1969).

### 5.2.5 Library service theory of Harris.

The theory of library service focuses on the library as a consumer of high culture rather than as primarily a producer of civilization, responsible for transmitting and reproducing culture in printed form. The theory opposes: (1) a positivistic epistemology focusing on apolitical scientific study of library management, and (2) the pluralistic view that librarians must be neutral in serving patrons, silent on social, economic, and cultural issues (Harris, M., 1986).

### 5.2.6 Reference theories.

The theory of basic reference offers: (1) conciliation by minimizing the conflict between sciences and humanities, (2) a definition of the generic book that includes all forms of recorded knowledge, (3) balance between retrieval of information and initiation of inquiry (i.e., between the extremes of doing nothing or doing everything for a patron), and (4) an encyclopedic approach to knowledge (Shores, L., 1958).

Modern reference service is based on three assumptions: (1) maximum client-centered service, (2) provision of specific information, and (3) integrated reference service based on empirical findings (Wagers, R., 1978).

Before the 1930s reference service was not based on any theoretical concepts: in 1930 Wyer provided first analyses of reference attitudes. The theory should include the nature, purpose, scope, and terminology of reference work and its relations to other subjects (Whittaker, K., 1977).

## 5.3 Examples of disciplines and theories related to LIS.

### 5.3.1 Cognitive science.

Cognitive science is an empirical discipline concerned with information science relations to intelligence in a natural and social environment. It is a formalistic, computer-formulated group of theories, a top-down analysis and phenomenological study of meaningful behavior. Its objectives are to provide (1) abstract description of mental processes, (2) exploration of physical systems, (3) plausibility of mental models, and (4) a neuro-physiological and a biological mechanism in cognition. In information theory cognitive science describes relations between physical properties, the maximum rate of information processing, and information transfer regardless of its meaning (Pylyshyn, Z. W., 1983).

Cognitive structures and processes are represented by a number of theories: (1) psychoanalytical (the theory of learning about ego involvement in the processes), (2) field theory (the organized nature of perception), (3) scheme theory (based on past experiences; and (4) cognitive personality (organized neural structures) (Bieri, J., 1971).

### 5.3.2 Domain theory of Kouzes and Mico.

Domain theory is a sphere of influence or control claimed by a social entity. It consists of three domains: (1) policy based on participative management, (2) management facilitating service aspects of organization, and (3) the service domain, which is client-oriented and self-autonomous. The theory is recommended for evaluation of library organization (White, D. A. & T. D. Wilson, 1984).

### 5.3.3 General Systems theory.

General systems theory, according to some writers, should replace traditional sociological models in librarianship, because it is more open and more hospitable to changes (Hanks, G. & C. J. Schmidt, 1975). It provides a scientific explanation of "wholes" and "wholeness," contradicting the notion of rationalism that all natural phenomena are explained in terms of physics. According to general systems theories, separate entities can unite to form a new entity of higher complexity. Librarianship is based on an open system in constant interrelationships between various elements within their environments (Foskett, D. J., 1972).

However, the takeover mentality and its failure to distinguish data systems (transmission of signals) from idea systems (intersubjective communication of thoughts) call for replacing systems theory (focusing on controlled manipulation of physical data) with symbolic interactionism (explaining how mind communicates with other minds through communication of ideas) (Wright, H. C., 1984b).

### 5.3.4 Information theories.

These theories are used as criteria for choosing probability distribution, as a determination of the degree of uncertainty, and as a message of information acquisition (Tribus, M., 1083). For example, the engineering theory of information is based on reduction of uncertainty; the newer theories maintain that humans pick up information directly by perceiving information invariances, thus shifting the concept of information from that of uncertainty to certainty (Strong, G. W., 1982).

### 5.3.5 Metatheory.

Metatheory facilitates creation of specific theories and delivery of their products. It also addresses idiosyncrasies of each component theory. Statements about information in this theory can be (a) causal, non-analytical, descriptive based on naive realism, (b) macroscopic, analytical, pragmatic based on empiricism; or (c) microscopic: analytical and practical explanation based on philosophical rationalism. Relations between these levels are of correspondence, not equivalence (Dow, J. T., 1977).

### 5.3.6 Metascience.

Metascience is defined as an organization of knowledge records with a knowledge base (i.e., specialized professional knowledge), focusing on form rather than content. Metascience can be structural, semiotic, or based on systems theory. It applies to librarianship by focusing on (a) an organizational structure of knowledge, (2) patterns of information use, and (3) the theory of intellectual freedom (Winter, M. F., 1988).

Some authors argue that theoretical knowledge of librarianship cannot be based on Kaplan s concept of library metascience, in which subject matter is provided not by nature but by innate ideas, because library methodology is only bibliographic. However, librarianship can be considered a metascience, interpreted by Otten and Debon as a synthesis of various disciplines into one theory. Librarianship is well suited for that function by possessing a variety of bibliographic methods for locating, selecting and synthesizing relevant theories of other disciplines (Shaughnessy, T. W., 1976).

### 5.3.7 Management theories.

The field of management of information manages information *about* records in order to manage the records themselves (Durr, W. T., 1988.)

Early 19th-century bureaucracy was simple, with minimal governmental interference. Managerial professionalism emerged in the 1930s, expanding public services and governmental controls. Administration was defined as POSTCORB (Planning, Organization, Staffing, Directing, Coordinating, Reporting, Budgeting). The human relations movement began at the same time, focusing on personnel relations. In 1950 a number of new theories appeared: operations research (mechanization, computers and simulation); systems analysis (studying the nature of the organization); organizational theories (interdisciplinarity of organization). B. Goldstein considered changes as a constant social reality; D. L. Raphael perceived the system as a point of view integrating statical "structure" with dynamic function and the library system as homeostatic (controlled by feedback), goal-oriented, and constantly changing. Advances in the theory of management were endorsed and expanded by library theoreticians, but were slowly and reluctantly accepted by practicing librarians (Harlow, N. *et al.*, 1969).

Staff morale in libraries is discussed in terms of activities regulating procedures, operations, and guiding principles in a contextual environment (Nitecki, J. Z., 1984a), while austerity in library management is analyzed in terms of its impact on policies, services, and processes (Nitecki, J. Z., 1984b).

Theories of motivating human behavior that relate to librarianship include: (1) the association theory of trial and error, based on need reduction and stimulus-response concept, (2) cognitive theory, focusing on socially learned motivation (e.g., goals), (3) achievement theory, concentrating on accomplishment of success and avoidance of failure, (4) humanistic theory, considering motivation based on psychological and esthetic needs. All the above theories apply to the educational role of librarians in library instruction (Rogers, S. J., 1979).

Theory of management is represented in metalibrarianship by: (1) the nature of library administration (a procedural dimension), (2) the contextual service-oriented environment, and (3) the conceptual, theoretical level of the discipline (Nitecki, J. Z., 1980a).

5.3.8 Middle Range theory.

Middle range theory is a low-level theoretical statement intermediate to a general system theory, too remote for empirical generalizations and too descriptive for particular situations. It is based on F. Bacon's "middle axiom" and considers each theory a building block in system theories, guiding empirical research by serving as an intermediary theory and ending in special theories by consolidating empirical findings (Roole, H., 1985).

5.3.9 Organizational theory.

Functional integration is the general theory of organization that combines functional specialization with direct authority relationships, such as educational involvement of libraries (Dimock, M. E., 1938).

Three models of organization are identified: (1) the rational model (a hierarchical pattern of authority that underestimates irrational factors); (2) the natural system model (focus on the importance of a peer group, underestimating the impact of formal organization); (3) the structural model (synthesis and harmony between the other two models are based on a dichotomy of rational and irrational, discipline and autonomy, formal and informal relations). Libraries tend to follow the rational-bureaucratic model, modified by democratic emotional aspects (Knapp, P. B., 1973).

### 5.3.10 Phenomenology.

Phenomenology is a non-quantitative or qualitative philosophy, focusing on the appearance rather than the actual reality, rejecting scientific method as inadequate to explain social phenomena. Facts and objects cannot exist without man's consciousness, hence subjective personal experiences should be the main object of philosophical inquiry. It is relevant to librarianship, which is considered a suborganization of society, with information as a derived demand, not as a commodity demanded for its own sake. Librarians should shift their attention from means to ends, by adopting the epistemological focus on the study of patrons rather than of things, by redefining subject-object relationships, and by concentrating on concerns and care of library services rather than simple objectivity (Glossop, M., 1978).

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5.3.11 Piaget's theory.

In Piaget's developmental theory of knowledge, information is of two kinds: (1) a coded fact, a figurative aspect of knowledge, or (b) a process of knowledge, its operative aspect. Figurative knowing is a static aspect of a particular configuration in a given situation. The operative aspect focuses on what is general and given. Assimilation is an inner-directive process from a particular object to general schemes. Accommodation is an outer-directed process from a general schema to particular content. The commodity of information is relative: any symbol is meaningful only in relation to an operative understanding, which, when changed, also changes the symbols. This is the meaning of material symbols (Furt, H. G., 1974).

5.3.12 Popper theory of objective knowledge.

Popper's taxonomy identifies the physical world (World 1), the world of conscious experiences (World 2) and the logical content of human theories, ideas and production (World 3). The interaction between ourselves and the third world provides for a growth of objective knowledge (Popper, K., 1972; Neill, S., 1985b).

Library records are regarded as part of World 3, and recorded knowledge interprets relations between World 2 and World 3. Records become independent of the knowing subject. This model is criticized for confusing 'information' with 'sense-data (Brookes, B. C., 1980a).

Popper also introduced the falsifying law, which is of a too-low level of universality to explain the validity of the theory tested, but which will suggest a way of refuting that theory as false (Popper, K. R., 1972). The applicability of that law in library theory is questioned as impractical.

5.3.13 Sociology of knowledge.

Sociology of knowledge is a study of relations between thought and society. In librarianship the interpretation and classification of knowledge were and are socially relevant, with the perception of needs and behavior related to sociology of knowledge (Holroyd, G., 1972).

## 5.4 Selected Models.

5.4.1 Computer and Information Science Model.

Computer information science (CIS), the model of mechanical pragmatic meaning, is defined as a "pragmatically symbolized object"; its paradigms are social decisions concerning an ideology's proper course of action (Gorn, S., 1983a).

It focuses on interdependence of symbol systems and on the process of interpreting them in terms of cybernetic pragmatism, which considers what can and cannot be mechanized. CIS draws from engineering, mathematics, philosophy, psychology, and linguistics. Its principles include: (1) Ockham simplicity, (2) memory flow, (3) steady state (stability), (4) scatter of information, (5) transitional behavior, (6) growth (heuristic), and (7) specialized education (Gorn, S., 1967).

5.4.2 Common-sense approach models.

Common sense provides a metaphysical recognition of simple elements in complex situations. Three views of common sense are: (1) as conceptual generalization (metaphysical predicates), (2) as contextual tradition (cultural environment), and (3) as common sense process (pragmatically analyzed actions) (Nitecki, J. Z., 1987a).

5.4.3 Derwin's communication model.

The model consists of information describing reality by focusing on the individual user of information as its creator: Information 1 (data describing the external part of an individuals' own image of reality), Information 2 (ideas about the structure of internal reality), and Information 3 (subjective perception of reality based on behavior that selects information) (Neill, S., 1987b). Electronic media incorporate ends (goal accomplishment) without providing means for attaining them. Three such basic means are identified: (1) information about alternative means to achieve an outcome, (2) information about criteria with which to evaluate the means, and (3) data that allow criteria to be applied to means for the final decision (Dervin, B., 1976).

5.4.4 Barfield's epistemology.

Barfield's epistemological approach is applied to the study of the nature of library science. It opposes the empirical and the positivistic approaches, Descarte's mechanical interpretation, and Popper's scientific approach to history. It suggests instead a metaphorical interpretation of reality, which internalizes knowledge and makes it intuitive and immediate by expanding intellectual consciousness (Menzel. J. P., 1972).

### 5.4.5 Shera's social epistemology.

Shera's social epistemology (macrobibliology) bridges library and information science by exploring the role of bibliography in communication. Here the bibliography is substituted for graphic communication; it provides situational analysis (essential information) and analysis of information units. Social epistemology is reinforced by Goffman's epidemiological theory of dissemination of knowledge and Bradford's law of scatter (Brookes, B. C., 1973). The model stresses relations of knowledge to society but overlooks society's impact on knowledge (Benge, R. C., 1957; Foskett, D. J., 1968).

Shera defined librarianship as a trinity of acquisition, organization of knowledge, and service, with information science contributing to librarianship only in matters of organization by arranging and processing records of communication and their use (Wright, H. C., 1988). He viewed the librarian as mediator among books-society-graphic records (Czopek, P., 1984).

The model may not be helpful to librarians in mediation between people and records, unless its epistemology excludes the concept of "maximization of utility," but then, that kind of epistemology is not needed (Wilson, Patrick, 1973).

### 5.4.6 Epistemo-dynamics discipline.

There is an anticipation of the emergence of new discipline, "epistemo-dynamics" as a base for information science. It will study knowledge processes, its growth, and controls (Kochen, M., 1969).

### 5.4.7 Genetic and Data models.

There is an equivalence between biotic and organizational systems in the context of Darwinian evolution. Genetic material in the organism is functionally equivalent to the content of the data model. Darwinian selection is either creative (positive impact) or suppressing (negative feedback).

| *Genetic Model Defines*: | *Data Model Defines*: |
|---|---|
| - development process: Controls behavior of organism, | - organizational function: Controls the content and timing of functions. |
| - Provides information for precontinuity between generations, | - Contains necessary information to replicate basic organizational structure, |
| - Provides causal bases variability in enviromental selection. | - Only information describes history and operations of organisms. |

(Fedanzo, A. J., 1986)

### 5.4.8 Information models.

### 5.4.8.1 Information paradigms.

The synthetic model of information paradigm is based on the assumption that the primary library roles are acquisition, storage, organization, and retrieval of information. The model overlooks other library functions (e.g., reading services), overemphasizing the role of the computer by confusing information with knowledge (Apostle, R. & B. Raymond, 1986).

### 5.4.8.2 Cognitive models.

Three cognitive models of information transfer processes are based on linguistic analysis of the word 'information' as: (1) direct communication, (2) individual communication, and (3) information-selective model of an information user. These models are based on weak empirical data, hence the field lacks a coherent model of information transfer per se (Green, R., 1991).

### 5.4.8.3 Fairthorne's information flow model.

This model of information flow consists of a number of notifications (mention and delivery of recorded messages) and relationships between them. In the model, the amount of information measures not the "stuff," but relations.

A code is an indicator of choice made from the message; a message is an aggregate of entities. Fairthorne's 'marking and parking' are defined by site, destination, code, and message. Librarians deliver messages and are concerned about the subjects of discourse (Fairthorne, R.A., 1967). The model of twenty triads is based on a mathematical approach free of semantical and epistemological implications in information flow (Fairthorne, R. A., 1968a).

### 5.4.8.4 Information management models.

Models in information management may be: mechanistic (hierarchical structure); cybernetic (open system); tribal (rites and ceremonies); and political (coalitions and conflicts) (Jellis, J., 1988).

### 5.4.9 Librametry.

There seems to be a need for a new discipline, termed 'librametry', relevant to a given period, changing periodically to reflect changing society (Ranganathan, S. R., 1948).

### 5.4.10 Library models.

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Two models of librarianship are in conflict: (a) one based on market ideology and information as a commodity (Wasserman, Pauline Wilson), and (b) the other, based on self-reliance on the individual and less dependency on the market system (Toffler, Illich; Berry, J. J., 1981).

### 5.4.10.1 Shaw's library-college model.

Library college is the situation when college is library and library is a college. The concept is based on students' independent study at their individual pace, with librarians guiding them in the literature of liberal education (Shores, L., 1966). It is learning-centered, considering the library as the single most important instrument in the learning processes, by providing access to wide range of subjects (Schuster, M., 1977).

The model focuses on (a) the generic book that encompasses all recorded knowledge in all formats, and (b) the opportunities provided by the library to students solving their own problems by using their intellectual abilities (Shores, L., 1975). It stresses learning through interaction among faculty, administration, and students, considering media formats as extensions of a book.

The model is not accepted by Lukenbill because teachers lack library expertise (re bibliography) and librarians do not have teaching expertise (re subject areas) (Luknebill, W. R., 1983).

### 5.4.10.2 Library and learning models.

Libraries and learning are united by independence of different intellectual activities and structural levels of preference and learning. Learning can be: (1) holistic (comprehensive), (2) serialist (operational), (3) versatile (adapting either of the above approaches), (4) syllabus-bound (organized, instructed), or (5) syllabus-free (less structured).

The library learning model is based on (1) provision of prestructured ideas and information, (2) access to a variety of references on a given subject, (3) adjustment of the environment to the patron's needs, and (4) the patron's perception of independent learning (Ford, N., 1979).

5.4.10.3 Gore's no growth model.

This model is based on the fixed size of a collection with changing contents. In the right-size collection, both the number of unused books and the number of complaints about the use of the collection are low (Gore, D., 1981).

5.4.10.4 Research models.

Library research is evenly divided among studies of service, storage, and retrieval. They use empirical strategies half of the time, followed by survey method. What was notable in the period from 1965 to 1985 was the loss of interest in methodology and a shift from classification and indexing to information retrieval (Jarvelin, K. & P. Vakkari, 1991).

Three approaches to the research in library and information science are: (1) the positivistic method, most popular among librarians, is experimental, ex post facto, descriptive, and empirical, testing hypotheses; (2) constructivism consists of reconstruction of reality in human mind and includes: (a) cognitivists Belkin, DeMey, and Ellis, (b) phenomenologists and hermeneuticians Benediktsson and Bennett; (c) symbolic interactionist C. H.Wright, (d) reader-oriented theorists De Beer, Neill, and J. Z. Nitecki; (e) dialecticians Bergen, J. Z. Nitecki, and Dick; (3) critical theorists who focus on the influence of ideology and politics on experience, represented by neo-Marxists and feminists (Dick, A. L., 1993).

Library research is considered dialectically as an abstract process in theory-building, or as a means of solving problems (Freeman, M. S., 1985).

(a) Bohm's holomovement model deals with the fragmentation of research. "The Implicated Order of the Holomovement" is a potential context for library theory. Knowledge is an organic whole that contradicts entropy (assuming that everything is between initial maximum and terminal minimum of energy) by (a) its self-ordering processes, and (b) by the evidence of human constant improvement with decreasing energy (a metaphysical universe of human knowledge).

In mechanistic order, volumes and titles are considered as individual, physical units, but in the holomovement model, titles, representing unique subjects, exist in the context of abstract aggregate of the total collection. Individual titles, citing each other, together represent the total knowledge, while volumes, as physical units, merely duplicate the same context. The wholeness of flowing movement is known only implicitly; the organization of knowledge in libraries embodies implicative order in the contextual world view that is never defined because everything is a part of it, described by the integrative law of underlying order (Beagle, D., 1988).

(b) The conceptual model of the research library consists of (1) information handling, (2) access, (3) evaluation of users' needs, and (4) delivery of services and programs. Each of its components is characterized by its own (1) focus, (2) function, (3) resources, (4) staffing, (5) skills, and (6) results. Boundaries between the components will be constantly adapted to the changing needs of library patrons (Woodsworth, A. *et al.*, 1989).

### 5.4.11 Linguistic model of communication.

The linguistic model of communication focuses on the importance of a dialogue between the librarian and the patron, leading to a negotiated answer to the patron's question (Yngwe, V. H., 1981).

### 5.4.12 Samples' mind model.

In Samples's model a metaphorical mind is interpreted as a mirror image of the rational mind. The division of brain into the left cerebral hemisphere as logical organizer and the right hemisphere as holistic preceptor of reality is compared to library function of interrelating rational and metaphoric experiences (Samples, B., 1976; Powell, J. W. & A. R. B. Lelieuvre, 1979).

The perception-memory-library-information processes parallel the processes in the brain. Information is taken into a system and held there in a classified form, available for retrieval. The limited capacities of brain and library require selectivity and filtering of information, based on the principle of economy that applies equally to both library and brain systems (McGarry, K. J.. 1981).

5.4.13 Nitecki's metalibrarianship.

Metalibrarianship is a model for basic metaphysical essence, epistemological nature, and valuational attributes of relationships between the primary elements: generic carriers of messages, their content, and their recipients in written communication, analyzed on conceptual, contextual, and procedural levels. The model's paradigms extend beyond traditional librarianship by relating to the metaphorical aspects of any recorded communication (Nitecki, J. Z., 1968c, 1970, 1994); it focuses on primary concepts of the domain, not on its specific properties (Nitecki, J. Z., 1980b).

The application of the model is illustrated in the discussion of library public interest in terms of procedural, contextual .and conceptual viewpoints (Nitecki, J. Z., 1963) and its semantical relations in the library theory (Nitecki, J. Z., 1964).

Fairthorne compares his model, focusing on signaling, with Nitecki's focus on the meaning of relations. To him, knowledge is a discourse; to Nitecki, it is relations known between primitive concepts. Both models deal with the nature of the discipline but they differ in the vantage point of analyses. Harris agrees with Nitecki's conceptualization of the library mission but does not think that it can be harmoniously integrated into a philosophy of librarianship (Harris, M., 1976).

5.4.14 Model of metric discipline.

This model addresses relationships between (a) bibliometrics (a quantitative study of communication processes), (b) infometrics (the mathematical description of information systems), and (c) scienometrics (the science that studies quantitative statistical measurements) (Morales, M., 1985).

5.4.15 Models of reality.

Plato considered reality an absolute form, or as continually changing derivative existence. Forms are never created and information can be called knowledge only when its content is directly related to the reality of forms. Plato would not approve the principle of providing all books to all people because not all are ready to understand them. He also believed that all books represent truth, while librarians believe that each book addresses different truth (White, D. A., 1978).

Boulding's frame of reference is based on individuals' image of reality that consists of: (1) goals, beliefs, knowledge, (2) self-image, (3) plans for coping with the environment in an information-seeking process (Donohew, L. & T. Leonard, 1973).

The intellectual environment is a situation in which individuals integrate their various perceptions of reality into total, integrated knowledge. The environment of reality is three-dimensional: (1) physiological (intellectual stimulation), (2) psychological (unique individuals' perception), and (3) philosophical (conscious awareness) (Nitecki, J. Z., 1988a).

5.4.16 Value-added model of Taylor.

The 'value-added' concept is defined as a frame of reference for analyzing an information system and describing it in terms of interface between practice, technology, the content of an information message, and its users.

The author identified twenty-three related activities, arranged in three categories, and seven major characteristics of the model: its focus, validity, definition, purpose, a means for conveying thinking in the planning system, and its benefits and assistance to users (Taylor, R. S., 1986).

### 5.5 Principles and laws.

Knowledge of librarianship should be organized in abstract principles. "Specialization in generalism" is not enough; a philosophy of librarianship must express intellectual problems of the profession (Goode, W. J., 1961).

Listed here are selected library laws extracted from the compendium in Part Two of this study.

5.5.1 Cosmonomic laws.

The philosophy of cosmonomic laws when applied to analyses of librarianship, assumes that (a) all theoretical thoughts proceed from basic motives, (b) autonomous thoughts do not exist, and (c) theoretical thoughts contain analyses of different aspects of reality, expressed integrally in prehistorical thought (Pansegrouw, J. G., 1988).

5.5.2 Hermeneutics.

Hermeneutic philosophy is based on the notion of a "principle of effective history" (Hans-Georg Gadamer), implying that the text throughout history was a subject of interpretation, generating new experiences; hence our views today are imposed on us, unconsciously by the effect of historical interpretation (Hoel, I. H. A. L., 1991).

### 5.5.3 Ranganathan's laws.

Ranganathan's "Five Laws" state that: (1) books are for use, (2) every reader has his book, (3) every book has its reader, (4) the reader's time is to be saved, and (5) the library is a growing organism (Ranganathan, S. R., 1931).

The laws describe an operational philosophy of librarianship and provide rules for library organization and management (Ranganathan, S. E., 1963). They are, however, considered not scientific laws but moral ideas about library conduct and service (Benge, R. C., 1957). Ashworth suggested the sixth law: "stop the user from wasting time" (Ashworth, W., 1979). Vickery identified still more laws: (7) save the user's time, (8) no information system is self-sufficient, (9) each information service is only a part of communication system, (10) information should be subsidized by the user in proportion to the benefits received, (11) the system should be cost effective, and (12) the system should be adaptable to change (Vickery, B., 1987).

Ranganathan's approach to librarianship was holistic (Foskett, D. J., 1968). His overall contribution was more as a leader than an inventor, as an organizer rather than a creator. His philosophy was based on (1) the Vendic notion of unity of knowledge, and (2) normative principles of library science adapted from scientific methodology. The five laws are norms and guiding ideas. and colon classification is a self-perpetuating system (Sati) A. P. and R. N. Sharma, 1986).

5.5.4 The principle of recall and precision.

This principle states that as the total number of citations generated by searching increases (recall), the number of useful citations (precision) also increases (Cleverdon). The recall and precision of the search depend on the skill of the searchers and their knowledge of the indexing system. These criteria can also be used in evaluating computer-assisted searches for information (Shoaf, E. C., 1988).

5.5.5 Zipff principle.

The "principle of least effort" (G. Zipff, 1949) means that each individual selects the least expensive (in effort) course of action. It is already applied in Mooers' law of information retrieval (information retrieval is determined by the intensity of desire for information), in Cutter's convenience of the reader, and in Ranganathan's "save the time of the reader" law.

In science, the principle is illustrated by quantum mechanics and a holistic view in psychology. This principle can unify library research and practice (Bierbaum, E. A., 1990).

5.6 Application of Methodology to LIS: Examples.

Methodology is a way of structuring one's own thinking and action. Five perspectives on methodology are identified: (1) provision-oriented: a positivistic philosophy that there is one best way of performance, (2) task-oriented: useful in designing information, (3) process-oriented: incorporates social and psychological needs, (4) issue-oriented: a hermeneutic philosophy of understanding reality, and (5) the holistic perspective of interdependence between individual elements and the rest of the system (Jayaranta, M, 1988).

Process, more than form, defines life situations; form is a residue of a process. The library is a processual object of communication processes, and information is not a thing, but a relation between matter and energy, a negative entropy (Weiskel, T. C., 1986).

Distinction is made between the methods of natural sciences and that of social and humanistic knowledge. Methods of science are effective in obtaining knowledge about material aspects of reality only. The relations of the material world, as perceived by the senses, to the abstract world of thoughts has not been resolved (Wright, H. C., 1982a).

### 5.6.1 Andragogy.

Philosophy of library service and adult education was broadened by emphasis on the importance of the individual in democratic society (Wilson, L. R., 1953).

Andragogy is a method of teaching adults that is based on mutual respect and informal relations, regarding older patrons as individual and active participants. In contrast, pedagogy is an authority-oriented, formal method that depends on the instructor (Sheridan, J., 1986).

### 5.6.2 Comparative librarianship.

Comparative librarianship is a method of inquiry focusing on the systematic analysis of library development and practice in social context. It involves cross-cultural comparison and explanation of similarities and differences among different countries.

International librarianship is related to but not similar to comparative librarianship: its focus is on activities among libraries in different countries, promoting and evaluating library services (Rogers, A. R., 1984a).

Comparative librarianship performs an important function in social reforms by providing comparison with other philosophies of librarianship (Shores, L., 1970). It evolved in four stages as: (1) a part of metalibrary philosophy and theory underlying library practice throughout the world, (2) a world study of comparative librarianship, (3) global librarianship, focusing on human information needs, and (4) as extraterrestrial librarianship, a logical outgrowth of global librarianship.

Philosophy of librarianship includes nature, purpose, origin, categories, interacting variables, and development -- all in the context of comparative librarianship.

Four laws of world librarianship are suggested: (1) of appropriateness (relative to the country's culture), (2) of interdependence (quality of librarianship reflected in all libraries), (3) of partial convergence (standardization), and (4) of convergence (forming global librarianship (Krzys R. & G. Litton, 1983).

Western philosophy is based on free inquiry of how to organize material effectively and teach patrons how to help themselves. Soviet philosophy of librarianship focused not on a free inquiry but on the indoctrination of official views (Shores, A. L., 1955). This approach can be understood only in the context of communist political theory. As an integral part of a socialistic education, it was responsible for implementing Marxian-Leninist viewpoint, rejecting neutrality and objectivity of Western philosophy of librarianship (Rovelstead, M., 1974).

### 5.6.3 Scientific methodology.

Application of scientific methodology to librarianship is criticized for being intolerant, dehumanizing the discipline by stressing things and technology rather than values, and by turning thinking into manipulative processes. The true librarianship is based not on action but on knowledge about human life. The scientific approach left unresolved the problem of relating the material, sense-perceived world to a form-world of abstract thought (Wright, H. C., 1982).

### 5.6.4 Structural methodology.

Structural method consists of the three interrelated clusters: use (demand), knowledge (subject) and librarianship (subject literature); and of the three actions: planning (priorities), implementation (accessibility) and evaluation (in terms of goals). 'Literary statics' (a point in time) and its dynamics (a period of time) are analyzed by bibliometrics in terms of 'properties' (knowledge classes) and sequences (order). The structuralists are interested in the form rather than content of literature (Baugham, J. C., 1977).

### 5.6.5 Systems methodology.

System thinking is a point of view and a methodology emerging from it. Systems can be philosophical, analytical, or empirical, with a component of research and engineering. Among significant contributors are Bertelanffy's general systems theory; Ackoff's pragmatic and methodological research, Churchman's hierarchy in systems, and Simin's system design and testing (Mattessich, R., 1982).

## 6.0 Changing concepts and relations.

### 6.1 Metaphysical definitions.

Aristotle's analyses of change consisted of isolating three elements that are also applicable to librarianship: (1) the beginning of the process (involving books, librarians, or both), (2) the process itself (communication), and (3) the end of the process (impact on reader). The ambiguity in applying these stages in the library creates problems (Petocz, L., 1969).

Conceptual changes affecting philosophy of librarianship began with a psychological focus on memory, thoughts, and perceptions and epistemological concentration on knowledge processes. Among the recent changes, the focus shifted from philosophical consideration to psychological experimentation with cognition. The gestalt school concerns itself with transformation and organization of the perceptual and cognitive mechanism, focusing on content and the structure of cognitive changes (Suedfelt, P., 1971).

### 6.2 Epistemological nature.

EP-Co: Characteristics of change.

The pendulum swing of cultural changes has produced theories which serve as metaphors for a never-ending process. Verified at first, only to be falsified later, scientific theories and concepts obey precise laws of logic but also act in a random manner. Here chaos is a synonym for chance, a chance to understand the environment still better (I. Stewart, 1989).

Chaos is also a basic condition of the changing social world, characterized by a historical cycle: from authority, to democracy, and back to unguided free will and self-interest leading to social disintegration (Mason, E., 1975). And finally, insufficient examination of the meaning of changes on the technical level results in changes that are often merely cosmetic; (White, H. S., 1985), weakening the analysis of information gathering, its dissemination, and full applications of new technology (Holley, E. G., 1985).

The approaches to change can be: (1) radical: it makes real changes; (2) liberal: inherently ambivalent about changes; and (3) reactionary: openly supporting the status quo (McKenny, M. & E. Ericson, 1972). Utilitarian changes often mask important factors in cultural changes (Anderson, G. A., 1988).

The history of librarianship proves that the changing society will support changing roles of librarians and information scientists, reflected in changes such as: (a) the Gutenberg invention creating awareness of information, (b) the introduction of railroads in the 1830s that eliminated geographical isolation, changing the social responsibilities of librarians, followed in 1907 by John Cotton Dana's definition of special librarians in terms of their adaptability to change, or (c) the 1960s introduction of the computer increased the awareness of information needs; each awareness is based on education and information about the changes (Spaulding, F. H., 1988).

It is noted that most of the important inventions were developed in the present eight-hundreth lifetime of the human being (Toffler, A., 1980). Librarianship can survive the rapid changes by focusing on (1) efficiency of present functions, (2) support of research in information science, and (3) continuing education (Heilprin, L. B., 1979).

EP-Cx: Environment of changes.

Changes are caused by social conditions and technological development that impact on education and social institutions. In response to the changing environment Shera called for librarianship that focuses on communication of knowledge to all disciplines, while Shields wanted to reduce library activities to humanism only (Bonn, G. S. & S. Faibsoff, 1976).

The changing environment in librarianship is illustrated by a shift from process to function, from particular occurrence to knowledge, from the study of a single library to the study of librarianship (Butler, P., 1933).

Environmental trends in librarianship suggest that: (1) the information industry will become libraries' competitor, (2) the computer will encourage bypassing a library, and (3) electronic media will affect the nature of library collection (Briscoe, P. et al., 1986).

It is also suggested that the opposition of intellectuals to mass culture is based on platonic "totalitarianism" and fear of changes (Fesenmaier, S. L. 1988).

6.3 Valuational assertions.

A shift from books and reading to library technology resulted in changing value-emphasis from an individual patron to the library community, and from book values to its formats.

These changes are based on two fallacies: (1) that the human being can be transmuted into mathematical figments, and (2) that book value can be translated into statistical formulae (Haines, H. E., 1938). The radical shift in the concept of value and the lack of uniformity make it difficult to provide the patron with the model for identification and growth (Getzels, J. A., 1957).

Traditional library values changed in response to new technology and information needs resulting in (1) shifts from preservation of resources to their use, (2) the emergence of networks (the library cannot be independent), (3) replacement of humanities-related issues by management and information systems, (4) the rejection of neutrality and increased sensitivity to social and political issues of the day, (5) a change in focus from individual to mass culture and the education of minorities, and (6) the issue of how "to inform" becomes less important than the new demands for information technology (Whitteman, P., 1984.)

Discussions about value of automation in librarianship are often carried out in the realm of utopia, a nonexisting idealized state of perfection. However, automation has a significant impact on library development even before the change itself is fully implemented (Koop, J. J., 1988).

## 6.4 Examples of changes.

The following are some of the changes as seen by the observers of the library scene.

### 6.4.1 General trends.

Both nature and society constantly change their matter (mass), their energy and their organization (information) (Leupolt, M., 1981).

The concept of librarianship started changing in the 18th century when the focus shifted from (a) collections and the librarian-scholar who had encyclopedic knowledge but no training in library matters, and who acted as a keeper of the collection, to (b) the librarian-administrator, concentrating on organization and economy of operations in the library. The focus on servicing the collection led to the emergence of bibliothecal science (Kunze, H., 1973).

Historically, the focus changed from custodianship of books to bookmanship in the 1850s, to technical issues in 1870s, to a shift from description to explanation of resources to library patrons in the 1920s, and to the beginning of the search for a full-fledged philosophy of librarianship in 1950s (Egan, M., 1955).

The 19th-century preoccupation with technology (M. Dewey) was expanded by including reference, bibliography, and selection in the 1900s; cataloging, classification, subject heading, and administration in the 1920s; and special librarianship, information science, system analysis, and computer programs in the 1960s (Harlow, N., 1969a).

Overall, major trends that influenced librarianship include computer technology, management theories, and professional status (Eisenberg, M. B., 1988). Many of these changes suffer from problems not identified and alternatives not explored (Line, M. B., 1983).

Politics and philosophy of collection development changed from 1950s idealism and 1960s activism to 1980s skepticism about the government role, affecting the quality of collections and increasing the demand for preferential treatment, forcing librarians to be more involved in public relations (Fletcher, J., 1983).

The changes in library goals were prompted by the diversity of library records, the changing types of library patrons, and their use of libraries (Grasberger, F., 1952). The function of the public library gradually shifted from local, self-directed activities to bureaucratic services, focusing on efficiency but often overlooking the importance of the library environment, especially in an urban setting, to allow patrons to be alone with books (Glazer, N., 1959).

Library techniques and organization did not keep pace with the changing needs for information, resulting in inadequate services (Williams, G., 1964). The preference for societal funding of the sciences over the arts resulted in changing the focus from the inspirational to the investigative approach in research, the use of quantitative measurements, and emphasis on service objectives (Monroe, M. E., 1962).

Bibliographic control was replaced by intellectual organization of resources in order to maximize the social utility of documents (Kochen M., 1974). The library's expanding responsibility for the provision of services requiring other than locally held resources impacted on the philosophy of library cooperation (Blasingame, R. & MJ., Lynch, 1976). A shift from the warehouse-management image to that of a provider of information created a conflict between librarians and expectations of organizational proficiency among them (Drake, M. A., 1977), replacing the principle of comprehensiveness (the bigger the better) with the ideal of "completeness" (Baugham, J. C., 1977).

However, although new technology weakened reading habits, the main library goals of informal education, leisure reading, reference, and preservation remain the same (Dyckman, J. A., 1964). Yet, with the expansion of technology the traditional library will eventually disappear, since written words will cease to be primary means for storage and communication. Literacy will mean the ability to locate, retrieve, select, organize, and communicate information (Lancaster, F. W., 1982b).

A shift from the information explosion to its controllability is a dramatic reversal in bibliographic history (Koenig, M. E. D., 1982) (a) from the object-oriented to a system-oriented culture; (b) from things as sources of change to the ways things are done (Bolgiano, C., 1982), (c) from the focus on inventory and collection (catalogs, bibliographies, and classification) to the pragmatic approach, concerned with scholarly description of individual books (Batty D. & C. Bearman, 1983), and (d) from the focus on print media to the custodianship of access to recorded ideas (Oboler, E., 1983).

Because of the trend toward defining patrons in abstract terms, the focus of librarians shifted from the knowledge of books to the increased interest in media and computer-accessed data (Hall, M., 1984). The nineteeth century liberalism was substituted by information as a basic resource in economy; professional and technical proficiency and the corporate-market approach found in business transposed traditional ideals of culture and education (Lofgreen, H., 1985); exchange of things becomes the exchange of information (Marvin, C., 1987), shifting (a) from subject to activity, (b) from books to information needs, (c) from professional similarities to its differences, (d) from a social to a behavioral approach, and (e) from ideas provided by people to those suggested by systems (Stieg, M. F., 1992).

### 6.4.2 Specific changes.

#### 6.4.2.1 In librarianship.

Philosophy of librarianship shifted its focus from ownership of resources to access and information (Schuman, P. G., 1987). However, this change and changing library mission must be considered in the historical context, since their meaning changes with time (Robson, A., 1976).

The focus of postmodern society shifted from the liberal notion of technological progress to one of performativity (maximum output at minimum cost); knowledge became a marketable commodity, and academic disciplines are competing for the marketability of their own domain. It is suggested that librarians should counteract the idea of knowledge as a commodity and as capital (Van der Linde, G., 1990).

The interpretation of librarianship shifted (a) from the traditional educational role to that of the information provider, reducing the role of books to that of containers (Apostle, R. & B. Raymond, 1986), (b) from the political focus on democracy or communism to the conditions of democracy and its culture (Macleish, A., 1939), (c) from collection, size, and location to subject-based, personalized information content, and (d) from data processing to heuristic, symbolic information processing (Molholt, P., 1987).

The decline of the impact of the Western philosophy of librarianship in other countries may result in rejecting the emphasis on library services to individual (Parker, J. S., 1974).

Changing the librarians' role from scholars to technicians resulted in scholars becoming teachers and librarians becoming the managers of resources. (The notion that to serve scholars librarians must be themselves scholars is like saying that a good physician must be constantly ill to be a good physician [Wilson, M., 1989]). Furthermore, the role of guarding records is changed to that of their dissemination, and the focus on individual volume is shifted to the cataloging, classification, and subject headings of the whole collection.

New technology increased productivity but also reduced the Librarians' scholarly role to that of a specialized technician. The process is reversed in special libraries, in which librarians work as a team with scholars (Foskett, D. J., 1965). All in all, the change from custodianship to more specific service to patrons became more viable (Wasserman, P., 1972).

The abandonment of the concepts of the librarian as a scholar, humanist, and generalist followed the changing notion of the discipline as a social science, preoccupied with scientific research, technology, and bureaucracy. Library managers should eliminate bureaucracy and reestablish the 19th-century vision of the librarian as a teacher and defender of democratic values (Roberts, A. F., 1985).

The emergence of pro-active librarianship focuses on information and the client-centered approach. The changing technology, social needs, and new information formats will require a change of focus from a book-oriented to a patron-oriented approach. The conflict between traditional and pro-active approaches is a struggle between status quo and future-directed ideals augmented by changing environment (Harrelson, L. E., 1974).

6.4.2.2 In libraries.

Viewed in a historical context, libraries always related to society's ideology. The modern public library departed from the 18th-century concept of the scholarly library to the preservation of resources, and to access, utility, and circulation of collections (Vleeshauwer, H. J., 1964-65).

The research into the educational function of the 19th-century American public library gradually shifted to sociological research, especially in reading (1930--40), and to a new philosophical approach (McCrimmmon, B., 1975). This changed the interpretation of education from emphasis on self-improvement to education as a prerequisite for democracy (Macleish, A., 1940.)

The public library's commitment to an individual patron was influenced by Locke's philosophy of government by consent. It changed from 17th-century church influence to educational motivation and social libraries in the 18th century, followed by the emergence of the public library in the 19th century and expanded community services in the 20th century (Cushman, J., 1962).

A shift from custodianship to education stresses service to all, determined by librarians' professional knowledge as teachers (Cartwright, M. A., 1935) with the objectives of the American public library changing from the "largest number of books for greatest number of readers at any cost" to the "best reading for greatest number at the least cost" (Sherman, C. E., 1938).

The recent shift in public libraries from book collection to provision of information will be accepted if the new approach is easy for the public to use (Ballard, T., 1988).

The shift in academic libraries from providing access to information sources, to the provision of information itself will require librarians to be pro-active, anticipating needs in mediating between patrons and recorded resources (Holladay, J. W., 1982).

### 6.4.2.3 In library education.

Changing curricula in public education reflected the changing library role in society from the 19th-century textbook-centered approach, with peripheral involvement in education, to 20th-century specialization and use of computers, shifting from the self-contained library to the library system (Carnovsky, L., 1967), and from the library as a storehouse of knowledge, through library use and organization of its resources, to research of the library's basic problems (Bramley, G., 1967).

Library education shifted from cataloging processes to analytical skills in examining patrons' ways of thinking. The patron's approach may be (a) subcritical, unconscious by requiring librarian's guidance, (b) surface, characterized by impersonal thinking looking for a minimal search, and (c) deep, critical approach that determines patrons' real interest and information needs (Ford, N., 1986).

### 6.4.2.4 In technology.

Changing technology requires a change in librarians' role from owning and processing resources to the investigative function, focusing on new knowledge, different sources of information, review of electronic journals, and avoidance of disparity between have and have-not patrons.

New technology changes the character of information as a commodity from "not-for-profit" to "for-profit," impacting on the librarian's role of collecting, storing, and organizing information records, changing it to the role of intermediary between different information systems (Schiller, A., 1981). This transition from library to information context becomes a new base for librarians, calling for a balance between the mentality of traditional services and the entrepreneurial mode of operations (Zurkowski, P. G., 1981).

The evolution of electronic publishing went through four major changes: (1) use of paper only (indexes), (2) dual use (machine-readable form), (3) the new electronic mode (in reference), and (4) electronic publishing. Patrons who own a computer become librarians themselves, expecting quick access to information, and they are interested not in the processes of a library but in direct two-way communication (Sacks, J. R., 1986).

As the result of all these changes, some futurists anticipate the disappearance of traditional library. A few libraries will become passive archives, and librarians, as information specialists, will be free of the responsibility for a particular collection or library (Lancaster, F. W., 1982). Yet, some other writers maintain that in spite of many recent technical changes, the basic concepts in librarianship remain the same (Herner, S., 1974) and that librarians may continue to shape the future by being people-oriented, shifting from the role of gatekeepers to that of information deliverers (Penniman, W. D., 1991). In effect, the more things change, the more they remain the same.

## 7.0 Conclusion: Understanding Intellectual Chaos.

7.1 An important lesson learned from the theory of chaos is that even in the largest disorder there is some underlying order. The new theory posits the existence of "strange attractors" that react to the disturbance of a system by establishing a balance between its ordering and disordering forces. Strange attractors, by "conflating order and disorder, gave a challenging twist to the question of measuring a system's entropy . . . they created unpredictability. They raised entropy . . . they created information where none existed before" (Gleick, J., 1987, p. 258).

In library philosophy, such strange attractors are represented by the natural human need for information or knowledge, the very cornerstone of library philosophy. They create motivation for new information or knowledge whenever the unsatisfactory old explanation of the phenomena makes the existing knowledge obsolete and results in a disorder. The explanation of the new experience is absorbed in the new or modified systems of relations in the person's mind.

The purpose of this essay was to identify such strange attractors in the domain of library and information science. The hypothesis here is that the common denominator in all recorded knowledge is the existence of relationships between recorded facts, events, or phenomena and their interpretation, neither fully understood without the understanding of the other.

7.2 The initial stimulus for the development of the modern American philosophy of librarianship was the perception of its need, reinforced by the desire to change the image of the profession.

The early development of the philosophical approach was discouraged by discordant opinions over its meaning. Some people rejected library philosophy as irrelevant, since they misunderstood the distinction between the philosophical focus on total reality and the library-philosophy concentration on its own limited realities. The confusion between the contribution of philosophy to the understanding of knowledge and the LIS secondary role in its communication led to the dismissal of philosophical interpretation in librarianship as impractical. Both these types of objections invigorated the controversy between the theory, aiming at the objectives of LIS as a discipline, and the practical approach stressing library functions as an institution aiming at the attainment of these goals.

The theory of librarianship, a necessary precursor to its philosophy, evolved by accretion from the focus on building library collections based on the abstract value used in selection of material, through emphasis on service, which developed communication models among the library, its resources, and its patrons, to the preoccupation with access, stressing either the educational library role in training patrons in the use of bibliographic tools, or the retrieval of requested material.

The library philosophy grew by fusion of Platonic metaphysical idealism, Aristotelian epistemological analyses, and contemporary pragmatic and linguistic procedural analysis.

The protagonists' arguments for the philosophy of librarianship are illustrated by stressing the consequences of not having a philosophy, such as the vacillating mission of the public library, emphasis on differences among libraries, reactive attitude, and lack of understanding the nature of changes resulting in the application of new technologies, which were frequently merely cosmetic changes. The advantages of having a philosophy include the creation of a philosophical base for political control of library operations and the possibility of developing a new discipline that would concentrate on the study itself, providing an information base for other disciplines.

Most of the animadversion toward the philosophy of librarianship is based on a twofold paradox: the philosophy is criticized either for its too-inclusive scope or for its too-narrow domain. The former ignores the holistic nature of librarianship, and the latter does not yet recognize the expanded, metatheoretical approach of LIS (metalibrarianship). Criticism of the philosophical focus on the minority served by the LIS as undemocratic and elitist reflects the very nature of library service to those who request it. Considering the philosophy of librarianship an ideology is a political assessment of the philosophers' motives, propagating such ideology rather than the philosophy itself. Criticism of philosophical eclecticism runs contrary to the deliberate and unique LIS objectives toward unification of all knowledge through its bibliographic organization.

7.3 Definitions of philosophy are numerous, themselves subject to philosophical interpretation. For the purpose of this study philosophy proper is defined as the inquiry about the total system of knowledge. It is subdivided into "philosophies of": a number of subsystems of the total knowledge of reality, such as different philosophies of sciences, arts, or religions. One of them, we claim, may be the philosophy of a combined domain of library and information science (LIS).

Often, the term 'philosophy' is used derivationally, in discussing not so much a philosophy of a discipline but its philosophical attributes. When applied to library or information science, it is referred to as their "philosophical aspects."

Thus, we may distinguish between two philosophical models applicable to library and information science.

(1) Model for the philosophical aspects of LIS consist of:
  a: Inquiry into the components of LIS,
  b: Philosophical interpretation of their characteristics.
  c: Contributions of these interpretations to the understanding of library information science.
(2) Model for LIS philosophy of librarianship consists of:
  a: Inquiry into the unique and essential philosophical attributes of LIS.
  b: Philosophical interpretations of these attributes
  c: The value of the resulting LIS interpretations to other domains.

Philosophical interpretations in each model are formulated in terms of systems designed by individual writers or adapted from different, already-existing philosophical systems.

In the metalibrary approach, philosophical inquiry is formulated in terms of the domains' metaphysical, epistemological, and valuational aspects, discussed at the conceptual, contextual, and procedural levels.

To illustrate the difference, the generic concept 'research' may be analyzed in the first model as the contributor to the library or information science, by applying its meaning (definition of research methodology), its properties (empirical methodology), and its values (verifiable methodology) to LIS research methodology.

In the second model, the focus may be on the contribution of unique LIS concepts to research, such as recorded information and its metaphysical meaning (a commodity or a process), its epistemological characteristic (indestructibility), and its value (data as building blocks) to any research. The concept 'research' was imported to LIS from other disciplines, just as the concept of 'recorded information' was exported from LIS to other disciplines.

It is suggested that in library and information sciences, considered as separate domains, the first model is more applicable, because each of the disciplines deals with more restrictive aspects of reality. Considering the two as subsets of LIS, they make the new discipline more complete, permitting development of the unique philosophical inquiry.

The criteria for the above distinctions in metalibrary model consist of the following:

(1) Philosophical aspects of library science are depicted by identification of the concepts cited by the authors as relevant to library or information sciences and their definitions (ME), properties (EP) and values (VA) relevant to either library or information science.

(2) In the philosophy of librarianship concepts unique to LIS are:

a. Defined in terms of their metaphysical meaning (ME) of basic relationships between generic book, its content, and its receiver, at the conceptual level (Co), the environment for data-information-knowledge transfer at contextual level (Cx), and changes among commodities or processes of the transfer at procedural level (Pd).

b. Identification of their epistemological nature (EP) include basic concepts (Co) (e.g., bibliographical tools), basic environment (Cx) (e.g., society-dependence), and basic processes (Pd) (specialized generalizations).

c. Values of the concepts (VA), consist of conceptual (Co) axiological worth (e.g., dissemination of information), contextual (Cx) deontological obligations (e.g., service to all patrons), and procedural (Pd) teleological consequences (e.g., changing patrons' understanding).

In the second model each concept must be analyzed as a unit, interrelated in a form of a philosophy of metalibrarianship, by offering metaphysical, epistemological, and valuational interpretations at conceptual, contextual, and procedural levels.

Any other theory or model of LIS, to be regarded as its philosophy, will have to provide its own system interrelating some concepts unique to LIS.

7.4 Many citations in this compendium revolve around the dilemma of librarianship. Four such quandaries illustrate the nature of the enigma.

(a) The theory vs. practice controversy may, at least in theory, be resolved by making a distinction between two subspecializations imposed by information technology. The new generation of theoreticians and scholars will focus on the abstract aspects of LIS, while the practicing librarians (or information specialists) will concentrate on practical issues of running the libraries (or information centers). The different goals of each group will require a different educational background and different professional classifications that resemble the distinction between hospital management and medical specialization, as two mutually dependent dimensions of the same discipline.

(b) The related contemporary tension between librarianship and information science is a manifestation of the discipline in transition. The organizational technology of the library is being reinvented under new names by computer and information specialists who are searching for order in the chaos of the information "explosion." Librarians react by changing their own terminology, replacing terms like 'library' with 'information center' and 'library schools' with 'information' or communication' departments, talking about 'information' instead of 'generic book' and 'information organization' instead of 'bibliographic control'.

Each terminological change brings with it some additional characteristics, but none depart from the basic nature of organization of the content of recorded book, data, or information. Changing terminology is a part of the evolving, living language. Most of the library terms presently used are of relatively recent origin; they will continue changing in response to the changing environment.

(c) The service vs. teaching dichotomy will be superseded if the focus in the philosophy of librarianship shifts from providing answers to identifying the resources needed to satisfy the needs of the inquirers. The primary concern ought to be the understanding of the meaning behind the questions asked by the individual inquirer, not the appropriateness of answers.

(d) The controversy over librarians's involvement in social issues, neutrality, and censorship will not be resolved until a distinction is made between the need for aggressive professional politics, arguing for the goals of the discipline, and the ideological neutrality of the specialists, demanded by neutral bibliographic service offered to all people, independently of their own philosophies. The former role is that of library professional organizations, the latter reflects the professional behavior of individual librarians qua librarian. Other disciplines learned the distinction; so can we.

Librarianship is similar to other sciences that have evolved through many stages of division and unity, each leading to a higher level of complexity. The present ideological chaos is the harbinger of a reinvigorated discipline, combining the traditional humanistic librarianship with modern, scientifically oriented information science.

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I am sadly amazed when rereading various comments expressed in this compendium - amazed at the dramatic impact of the new technology on the scholarship of all disciplines, and saddened by the minimal acknowledgement this modern revolution is giving to its library antecedence.

The emerging philosophy of the new discipline asks the same metaphysical questions about the meaning of its basic concepts, questions that had already been raised in library literature long before now; the epistemology of information phenomena reduces its basic nature to the same essential characteristics of the content of recorded information, searching for similar high values of efficient and effective access to information.

Both approaches share analogous concepts, contexts, and processes in the acquisition, organization, and use of acquired data, transformed through equivalent communication channels into knowledge; both struggle with the same perennial problems of ownership and deprivation of knowledge, preservation and dissemination of records and accommodation of individual needs in society's mores.

The new way of thinking and seeing reality is appealing to the general public for its practicality: the new methodology stimulates scientific research and the new technology invigorates artistic imagination. What emerges is a philosophy of a discipline that has much stronger appeal, a discipline that is more insightful and definitively further developed than the old theory of librarianship ever was.

Yet, the logical path in this development is the same today as it always was, from the more restricted, physically bound generic book to its present, more unbridled, form-free information content. And the resulting expansion creates a new synthesis in the evolution of human knowledge by creating another vibrant discipline built on its venerable foundations.

## PPART II: INTELLECTUAL INSIGHTS INTO LIBRARY AND INFORMATION SCIENCE: A COMPENDIUM

[This part of the book was not fully proof-read]

### - A -

ABRAMOV, K.I., and V.V., Skvortsov, 1978:

This essay, although politically obsolete, is a good example of philosophical interpretation of librarianship in a totalitarian state. It describes political and economic aims of Soviet libraries in building communistic society.

Motives and objectives behind the free provision of printed material determine the social role of librarianship, which changes with the changing needs. The theory is based on Lenin's principle of making the whole human intellect available to all people through education and self-development in socialistic system. It proclaims that: (a) library activities must be subordinated to the political and economic tasks, (b) expressing the ideological and theoretical viewpoint, in order to (c) increase technical skills of reading, and (d) to develop reader's ability to appreciate the ideological level of material read, by increasing the readership and readers involvement in libraries.

In the words of the editor's introduction, "it is the whole substructure of convictions and beliefs . . . that requires precise definition . . . [in order to understand] the crucial difference in aims and methods" of the democratic and communist systems. (p.151)

ADAMS. JOHN. 1931:

Integralism in education, introduced by the French, and adapted by English and Italian educators, aims at creating some order in educational curricula.

The library is a natural center for such unification. The school librarian is a liaison among teachers - specialists, instructing students how, but not what, to read, and providing integration in school curricula.

The author quotes Thomas Carlyle: 'The modern university is a library of books'. The librarian is a book specialist focusing on knowledge about books, not their content; he or she is not a book keeper in a museum of the past, but the distributor in the store house. He instructs the patron about the book and reading, and in extreme cases serves as a spoon-feeding provider of reading.

ADAMS. THOMAS R.. 1984:

The concern about books is addressed by librarians as administrators and curators who cares for them, printers who make them, publishers who promote them, booksellers who distribute them, collectors who treasures them, trustee who oversees the institution housing the books and the authors who write them - but none addresses the book itself and its needs.

For years the content and physical book were treated as inseparable. Library collections were based on the needs of the readers, while private collectors acquired books for their own satisfaction creating the oldest and least democratic collections. In the 18th century the collections were elitist dedicated to self-selected patrons' needs. The college libraries, later extended their collections to graduate and research users, and finally, expanding into general collections in the 19th century by addressing needs of future users.

Microphotography (in 1930s) and electrostatic printing (in 1950s) changed the relationship by focusing on the content of the book and information management, rather than on the book itself.

Rare books collection is related to, but different from a conventional library. Librarians consider the book as incidental; their first responsibility is for the control of information. Rare book librarians are primarily concerned with books, not its content (information), asking rather than answering questions, and serving history rather than people. (First rare book collection was set up at U of Michigan, in 1899).

AFFLERBACH, PETER, 1985:

This dissertation on the understanding of reading comprehension assumes that reading is an interactive process, depending on the relationship between the reader and the text, determined in part by a prior reader's knowledge of the topics discussed in the material read.

AGADA, JOHN, 1984:

Personality traits of librarians are not well suited for their job. They are submissive in social situation, demonstrating weak leadership, lacking confidence in themselves and feeling inferior. On the other hand, they tend to be inner-directed, friendly, sociable, liberal and nonrigid, with conventional life style, disinclined to take risks, resisting technical and social changes.

ALEXANDER, JEAN, 1944:

In reviewing the Journal of Information Ethics, the author identifies three ethical themes of the journal: (1) philosophical, (2) censorship, and (3) electronic information, and discussed the current controversy between post-Enlightenment schools of ethics, utilitarianism, Kantian's deontology, and the context-based neo-Aristotelian approach focusing on ethical practice.

"The underlying philosophical question is the possible danger to the public good of an instrumental approach to the generation and dissemination of information." (p.269)

ALLEN, BRYCE, 1981:

Information is the content of communication; librarians facilitate communication by selecting, acquiring, and organizing the material, thus bringing author and reader together.

Increased specialization reduces the coherence of the community, by introducing a centrifugal force within the information system: individual subject-specific interest overlooks the system as a whole. However, the negative entropy, [i.e., the information itself] counteracts specialization by providing guide to the interdisciplinarity of knowledge.

ALLEN, BRYCE and DAVID RESTER, 1990:

In the discussion of content analysis a distinction is made between data of content analysis (e.g., a document) and their context. The context includes the author of the document and intended meaning. In library and information science literature the 'content analysis' has two meanings: (a) as a research method, and (b) as an 'unscientific' expression of interest in the contexts of texts.

ALTMANN, A.E., 1988:

The primary role of the academic library is to support teaching and research. Basic definition of the librarian is by function, or task. The library is administered hierarchically, not by subject areas. Divisional libraries resemble teaching departments.

The departmentalization by function in academic libraries was necessitated by reliance on one large, single copy catalog. The introduction of computers calls for changing the traditional functional-based hierarchical relationships into matrix-style organization characterized by multiple reporting relationships and heavy emphasis on managerial network and cooperation based on shared goals. Collegial management is most successful in smaller libraries.

AMERICAN LIBRARY ASSOCIATION:

The ALA as an organization exhibits a surprising lack of interest in the philosophical aspects of the profession, with a major exception in the area of Ethics. There are no permanent committees addressing the philosophical issues, no educational activities or formal encouragement for the work in that field.

"The basic objectives of the American public library may be codified by the use of five convenient word symbols: (1) education, (2) information, (3) aesthetic appreciation, (4) research, and (5) recreation (ALA, 1943, p.20). "The librarian will not tell people what to think, but he has a duty to assist them in deciding what to think about. It is essential for the librarians to know what subjects and issues are vital as to know what books are good." (Ibid., p.22)

ALA's adapted a code of ethics in 1929, revised and reviewed it in subsequent years. Ethical issues were elaborated in ALA Code of Ethics (1939), ALA Post-war Standards (1943), and ALA Bill of Rights (1948)

The main tenets of the code of Ethics for librarians state that "the library as an institution exists for the benefit of a given constituency . . . (the librarians) assume the obligation to maintain ethical standards of behavior in relation to the governing authority under which they work, to the library constituency, to the library as an institution and to fellow workers on the staff, to other members of library profession, and to society in general." (ALA, 1939, pp. 128-9)

These principles are restated in a form of six statements relating to: quality of library services, resistance of censorship, privacy of information use, equitable personnel policies distinguishing between personal and institutional philosophies, and avoidance of conflict of interest. (ALA, 1975). Unfortunately, ALA provides no means for enforcing this code.

ANEDRSON, A.J., 1985:

The antithesis between the concepts of 'theory' and 'practice' is false. It is based on a mistaken identification by practitioners of the concept 'theory' with what is thought in library schools, and by academicians with the meaning of the concept 'practice' held by practitioners. Theory is an abstract concept, practice refers to activity; the two terms cannot be separated because mental activity cannot be disjointed from physical processes. "Theory is theory of practice; and practice is practice of theory." (p. 5)

ANDERSON, GLEEN A., 1988:

Major changes are often seen as revolutionary, stressing differences rather than similarities, yet utilitarian interpretation of changes motivated by utility overlooks more important factors in cultural changes. "Utility was not the strongest factor in the initial adoption of the codex form.

Indeed, it might be suggested that a utilitarian emphasis is likely to mask the more important factors in any cultural change." (p.116)

ANDERSON, HAZEL, 1957:

In communication words are common medium of exchange, the containers and the ideas the things contained. Writings are made up of words, but words are symbols of ideas, not the ideas themselves. "To give information is to unlock the word hoard." (p. 6)

ANDERSON, J. F., 1968:

Codes of ethics are mixtures of general moral principles and definite rules of conduct relating to the professionals, their clients and their colleagues. They are often updated, however, moral truths do not change, although their applications depend on economic, political and social changes. Ethics must relate to circumstances, consequences and goals aimed at. Codes are voluntary, developed and enforced by peers with primary concern for public interest.

ANDERTON, R.H., 1987:

Dretske's semantic theory of information is based on the proposition that meaning is manufactured from the raw material of information, that information is the content of information-bearing structure, and that meaningful knowledge is extracted by cognitive processes from information.

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Three kinds of information can be used in a system: as a transforming device, as an information flow, coordinating action, and as a factor in changing the environment.

Cognitive processing is a kind of a filter in which structures with higher orders of intentionality are constructed. Knowledge as a system is called knowledge because it is based on information.

ANWAR, MUNTAZ, 1967:

The author reviews the development of public library goals in the UK and USA from the fulfillment of moral aims of the 19th century to the assistance in the educational process in the 20th century. The focus in Britain was on political consciousness of electors, while in USA the stress was on cultural and intellectual objectives. As a product of democracy the basic objectives of any public library are to assists in universal education, by providing information and facilities for research and recreation.

APOSTLE, RICHARD and BORIS RAYMOND, 1986:

A synthetic model of an information paradigm is based on the assumption that the most important in librarianship is the acquisition, storage, organization and retrieval of information.

The term 'information' includes: data, facts, theories, opinions, communication and commercial commodity. It also describes environment, profession, society and science.

Recent emphasis is on "abstract, systematized bodies of knowledge and their rapid retrieval and transmission for generating new economic development." (p. 377) shifting from the traditional role of a librarian as educator, counselor and conservationist to an information provider.

The role of a book is reduced to that of an information container, suggesting that the profession of librarianship ought to separate itself from the library as an institution.

The model is criticized for overlooking other functions of librarianship (e.g., reader's services), overemphasizing its computer-related information services, and confusing the terms 'information' with 'knowledge'.

Librarianship and information science are considered the same discipline, by applying new technologies in procurement and handling of information, studying its nature and transfer. Fundamental is the question whether "libraries continue to serve the public educational, cultural and recreational needs, or will future librarian consider these needs peripheral and outside of their professional concern?" (p. 383)

ARNTZ, HELMUT, 1983:

His 'palaeology of information' states that physical manifestation of the constantly acquired new information is the expanded storage capacity of the brain. The most important in the emergence of man was the process of acquisition, storage, and conceptualization of information.

'Information pressure' for selection as a need for survival, creates new demand for adequate communication and expanded acquisition of new information. The desire for 'being informed' counteracts natural laws of Darwinian selection.

ARTANDI, SUZAN A., 1973:

Shannon's mathematical theory of communication is a necessary but insufficient definition of information because it excludes the sender, the receiver of the signal and its meaning. It addresses engineering problems of reproducing signals in general.

Shannon model includes: source, message, its transmitter, and interfering physical noise, but it excludes the meaning of the signal. Weaver added semantic noise, which distorts the meaning of the message, expanding the model by including semantic and effective (pragmatic) levels of communication. The semantics relates to the relations between the meaning of the signal send and received. The effect of the communication is determined by the psychological, emotional and ethical reaction of the receiver of the message.

Mathematical theory of communication is defined as the measure of one's freedom of choice in selecting a message; the amount of information (entropy) is defined through the amount of freedom one has in constructing messages. In a fixed number of choices, information is larger when all probabilities are equal, i.e., when uncertainty is the greatest. This principle creates a problem of distinguishing between information defined as the measure or the removal of uncertainty. Shannon's information stands for 'potential capacity', not for the amount actually communicated. Information must be relevant (new) to be able to remove existing uncertainty. Hence, relevant is negative information; the irrelevant (or old) information cannot remove the uncertainty, and should not be considered 'information'.

---- 1975:

Information is a means of societal decision-making process. Irrelevant information is distinguished from negative information.

Communication is a process of adjusting understanding and attitudes, based on common language, interest and common knowledge. The content of information in communication process is considered within the framework of two theories: Shannon's Mathematical Theory of Communication and semiotic interpretation of sign system. Shannon's focus is on the accuracy of information transfer; the focus of semantics is on the difference between receiver and sender's interpretation of the meaning in information transfer.

In Shannon's theory information defines one's freedom to select a message, measured in terms of probabilities and affected by noise in the transfer. The amount of information is measured by the logarithm to the base 2 of the number of available choices.

In Semiotic theory, communication is determined by (a) syntactical relations between physical signs, (b) semantic relations between signs and their designata, and (c) pragmatic relations between signs and their users.

Shannon's engineering aspect of communication is important in transference of signals: but the library science focus ought to be on semantic nature and pragmatic effectiveness of communication.

---- 1978:

Growing information output is coupled with increased reliance on information in all social interaction, in everyday decisions and in satisfying each curiosity; all of them interact with new information technology.

Information is a resource with political and economic value (it can be developed, controlled and utilized): it is a product, a service and commodity. It does not follow the laws of conservation of energy, but becomes obsolete. Acquired at the expense of other resources, information is not free.

Individuals relate increasingly to their environment through information, rather than direct experience: biologically their intellectual capacity is limited, while information grows exponentially leading to the information overload and what Lukasiewicz calls the 'ignorance explosion', a degradation of a "relative intellectual ability to deal with information" (p. 16). Hence, supply of information relates less to the speed of information transfer and more to the fundamental question of interpretation and understanding.

Industrial Revolution substituted human energy by machine. Information Revolution by introducing computers devaluated mental work. and affected production. communication. economics. nature of work and leisure. privacy and individual liberty.

ASHEIM, LESTER:

Asheim is a major contributor to the education of librarianship and its professional organization. He recognizes a need for library philosophy that would (a) define the meaning of library activities in terms of community needs, and (b) redefine the concept of the professional librarian.

There can be no leadership without philosophy which gives meaning to our activities; presently philosophy of librarianship is mainly one of the 'how' rather than 'why' (1957, p.103). He defined his own philosophy of librarianship as service oriented and user-focused. Librarianship is seen as an amalgam of humanities. social sciences and sciences.

In the preface to Butler's book (1961). Asheim stresses the importance of a transfer of attention from process to function and of the need for the philosophy of librarianship to respond to the needs of the coeval society. (1961)

Asheim made a distinction between censorship ('any deliberate bar against free access to books') and selection (based on the value of the book's content to the particular library readers) (1953). The focus is on the library user rather than the library itself; the user is considered in terms of community needs rather than wants, thus justifying the librarian's selection activities. However, open, indiscriminate access to all information is not always good, since it may create information overload, irrelevance and communication noise.

In his essay on Ortega (1982), Asheim argued for the need to extend librarians' responsibility to 'filter' information, suggested by Ortega, by developing means for selecting from total information that which is needed by individual client.

Reading is a major concern to Asheim. It ought to include promotion of lifelong reading habits for pleasure as well as for specific knowledge. (1959) There is a need to teach critical reading in self-education, and to distinguish between book reading and book use. (1984)

The book will remain important for verification, reflection and deliberation, but less useful, where 'sustained thoughts are not required'. Civilization is not depending on printed books; new communication technology displaces the old one, but seldom completely replaces it. (1955)

ASHWORTH, W., 1979:

Librarians, committed to idealism of service to everyone, developed series of cannons and romantic principles, now regarded as axioms. Each of them is based on the belief that everyone should have access to all knowledge stressing the concept of universal bibliographic control of all records. This view is circumscribed by the law of diminishing returns stating that with increased degree of perfection cost escalates dramatically.

The problems inherited in these unrealistic assumptions were magnified by the information explosion which increased the demands not only for the document but also for the information it contains.

When the amount of activities equals the amount of resources available, the continuing exponential growth of knowledge stops. The old axioms that larger collection offers greater access to knowledge, must be replaced by new priorities of preservation, and quality selection. "The greater rate of publication . . . the higher the proportion of poor quality material produced." (p.161) Therefore, increased rate of obsolescence requires increased weeding-out.

The Ranganathan's 'save the time of the user' cannon should be extended to 'stop the user wasting his time.' The model of a perfect library is one that is attainable: it must contain the material that is needed: the optimum effectiveness is achieved if the number of desirable material should be in proportion to the mathematical probability of its profitable use (p.164)

ASSOCIATION OF RESEARCH LIBRARIES, 1986:

Changing library environment impacts on relationship between scholars, publishers and librarians as well as on formats, user behavior and impedimentation of free flow of information.

New technology influences resource sharing, preservation, management of information systems and complicated decision making, calling for more specialized staff.

Scholarly communication is defined as a social phenomenon in which intellectual and creative activities are transmitted between scholars. It consists of the author, the ideas, the means of communication and the consumer of the information. It is a self-generating process. Not well understood is the process of changing user behavior, its impacts on relationships between scholars and library organization and the mediating roles of the librarian. Research library serves as the center for production, storage and retrieval of research material. The journal is a major communication vehicle for the users of scholarly communication.

ATKINS, STEPHEN E.. 1988:

The American research on the subject of librarianship in 1975-1984, although popular, was uneven (a 'roller coaster'). The overall number of articles with librarianship as a primary subject decreased, but they increased as secondary subjects. Overall peaks for both levels were reached in 1976, 1980, 1981, and 1984.

ATKINSON, ROSS, 1993:

The future relationships between library and commercial publishers will determine the future role of librarianship. The two agencies differ in the service attitude to the customer. The end-purpose of librarianship is the service to its patrons, while service is a mere means-to-business in the commercial publishing.

With the increased availability of information on line, many of the services provided by both these agencies will be available directly from writers, limiting the market, affecting the determination of the quality of service needed, and increasing the competition between libraries and commercial publishing.

The main challenge will be to provide satisfactory services at distance. Librarians ought to enter scholarly publishing, develop closer links with computer centers and university presses, provide publishing facilities to the faculty by cataloging, indexing, and on-line distribution of the published material through other libraries. The main advantage of librarianship over commercial publishing is in its ability to provide personalized relationships with its patrons and by tailoring its services to the individual needs of local library users.

AULD, LAWRENCE W.S., 1990:

The seven issues in library education are: (1) professional and academic expectations (service vs. research), (2) library science and information science (theoretical vs. practical approaches), (3) undergraduate programs (paraprofessionalism), (4) minority recruitment (library staff composition reflecting population mix), (5) international librarianship (goal variation among different countries); (6) size and organization of library schools (degree of library interdependence with parent institution), and (7) general vs. single purpose programs (librarian as a generalist vs. specialist).

Library school faculty focuses on research and teaching, minimizing professional activities and service. The practitioners emphasize professional training and service, considering research as a minor requirement. It is important to distinguish between the goals of library and information science, archives and information resource management.

- B -

BAKER. NICOLSON. 1994:

Traditional librarianship as illustrated by the card catalog, is now being replaced by online system. The card catalog with all its formal and informal annotations is, like an old manuscript, an irreplaceable record of bibliographic scholarship. The computerized catalogs, although effective retrieval systems, are harder to browse, have fewer cross-references, subject headings and annotations (p.69).

- "When we redefine libraries as means rather than as physical places - as conduits of knowledge rather than as physical buildings filled with physical books -- we may think that the new, more 'visionary,' more megatrendy definition embraces the old, but in fact it doesn't: the removal of the concrete word 'books' from the library's statement of purpose is exactly the act that allows misguided administrators to work out their hostility toward printed history while the rest of us sleep." (p.78)

BALLARD, LLOYD VERNOR, 1936:

The American library as an essential part of education system, is an educational filtration plant. It should develop social homogeneity based on the inculcation of a set of common ideas. It discharges its social responsibilities by exploring the wisdom and experience of the race. State should protect the library from negative influences.

BALLARD, T., 1988:

There is a significant change in the library service orientation by shifting emphasis in public libraries from book collection to provision of information. The technological changes will follow only when they are easy to use by people.

BAR-HILLEL, YEKOSHUA, 1955:

The term 'Theory of Information` is used in the USA since 1948 as a subscience of Communication Theory. In England it is applied to general scientific methodology, a more comprehensive science related to fields such as semantics, sociology, anthropology, or physics.

The concept of information applies not to the individual messages (as the concept of meaning would) but rather to the situation as a whole. Communication starts as events that are extra-linguistic, and is verbalized, reverbalized, encoded, send, distorted, received, decoded, expanded, understood and acted upon.

Communication engineers task is to devise a mechanism by which a significant sequence of words, produced by somebody, is reproduced at some other place, with shortest possible lag time.

Economics in time and cost can sometimes be achieved by permitting a certain deterioration in the replication of the original message, based on the redundancy of natural language.

The concept of semantic information has intrinsically nothing to do with communication. Semantics lies outside the scope of mathematical information theory. However, there is a logical relationship between the amount of semantic information (meaning of the message) and the frequency of its use.

Statistical theory of communication, introduced in 1948 had a significant impact on information theory processes such as estimation of relative frequency of words use.

BARZUN, JACQUES, 1969:

The modern public library is not a storehouse but an "intelligence agency. The librarian is often a technician trained in acquisition, cataloging, reference and management. Mechanical work is performed by computer. but the computer is useless as a source for intelligence. The book is not the same as its abstract. its content cannot be understood in advance.

There is no knowledge explosion: new knowledge is often old knowledge rehashed, or transferred from one container to another. The information explosion refers to an increase in the quantity of records.

A librarian is a reader-teacher, and should leave the role of technician to a computer specialist: he is not a specialist providing knowledge in the abstract, but a practicalist performing an important, next to life-saving service, of expert communication of intelligence."(p.3965).

BATTIN, PATRICIA, 1984a:

Librarians know more about computing than computer specialists about libraries. Academic librarians always distinguished between information and knowledge, subscribing to a philosophy based on the organization of knowledge and support of continuing scholarship.

Information managers treat all information as data, and are more concerned about the technology, hardware and systems than with the content of these data.

The challenge is to integrate information technology into the existing information system, with a centralized, coordinated linkages and compatibility to serve the diversity, and to permit the autonomy in productive scholarship.

"We need to keep in mind that information is not a property of documents, nor of bibliographic records, but the relationship between the data and the recipient." (Nina Matheson, quoted by Battin 1984, p.13)

---- 1984b:

Traditionally a library was defined as a storehouse where librarians 'mark and park' records, by maintaining bibliographically controlled archival collections of documents, with a catalog used as an inventory of the collection. Today the focus is on scholarly information with emphases on access and preservation of documents. Most important is the coordination of all branches of scholarship.

---- 1985:

Librarians should consider information as a function, concentrating on the user demands for knowledge, not a format. Development of the structure for the linkage between variety of formats and institutions holding them, will be a joint responsibility of computer and library science.

Most of the traditional task-oriented activities will be delegated to paraprofessionals. Teaching, consulting, planning, designing, developing and coordinating activities related to information function, will be assigned to the professional librarians.

BATTY, C.D., 1966:

Librarianship is not about knowledge, but about its organization. Librarians are concerned about the form and structure rather than the substance or content. The focus is on 'how' rather than 'what'. This approach requires a faculty of judgement defined by Kant as relating general principles to particular cases in the selection of appropriate rules. "The librarian must direct his practical experience by his theoretical knowledge and increase his theoretical understanding through practical experience."

BATTY DAVID and C. Bearman, 1983:

In librarianship as in general information activities, organization of knowledge consists of list-making.

Library traditions, until 1876, were pragmatic, concerned with bibliographic scholarly description of individual books. This approach started in late Renaissance, was cultivated in the 18th century and flourished in the 19th century.

Earliest writings were inventories, kept by monasteries, and used as catalogs. Library catalogs were the product of book trade: Aldus Manutius (15th century) provided descriptive bibliography, Andrew Maunsell (17th century) offered subject catalogs, and Marchand and Brunet (18th century) introduced general idea of bibliographic classification. Booksellers were interest in commercial catalogs grouping similar books in one place. Classical bibliographers recorded minute differences between them in order to identify individual copies. Scientists in the 19th century were protodocumentalists, compiling their own indexes.

In 1840 Jewett distinguished three factors important in universal bibliography: access to materials, reproduction technology and consistent description. Panizzi, Jewett, and Cutter attempted to standardize such descriptions.

Classical bibliographers are concerned with differences between published copies, librarians stress similarities in order to collect them in separate subject groups, documentalists and bibliographers are interested in detailed bibliography, using library techniques.

Library and informations science differ from research in two respects: (1) the discipline is structural rather than substantive, (2) it never provided solid quantitative base for empirical observations.

BAUGHAM, JAMES C., 1977:

In order to minimize the indefinite growth of library collection, the author suggests structural method in collection development based on the notion of 'bigger the collection the better.' It is a qualitative approach replacing 19th century principle of comprehensiveness by the ideal of 'completeness'. It involves relationships between three clusters: use (demand), knowledge (subject) and librarianship (subject literature), and three action concepts: planning (based on library's priorities), implementation (accessibility of the documents) and evaluation (evaluation in terms of library goals).

The structure of subject literature is a way of seeking relations. It provides understanding of the literary behavior and properties. The behavior is interpreted with reference to 'literary statics' (a point in time) and its 'dynamics (a period of time). The 'statics' is analyzed by bibliometrics (e.g., Bradford's law); the 'properties' refer to knowledge organization (class) and its sequence (order). Literature is further divided into parameters of associated subjects, form (object) and publishers.

The structuralist in the subject literature focuses on understanding its forms, processes, patterns and relationships rather than intellectual and scholarly content of the literary contents (p.248).

BAWA, N.S., 1965:

The accomplishments in designing ways and means to provide users access cannot continue until a philosophy of librarianship is developed that would stress self-education, freedom and democracy. Systematic philosophy would reveal central theme in an educative process that are sound philosophically, educationally and pragmatically.

BAWDEN, DAVID, 1986:

Creativity is defined as the ability to relate the things or ideas in new relationships by finding appropriate connections and analogies in the context of the already established patterns. Creativity although a very individual quality, is developed within social and organizational framework. It can be assisted by the kind and ways information is provided and handled.

Fundamental in creative processes are the provision and processing of information, with information systems adapted to "the improved representation of data, information and knowledge, so as to aid the recognition, retrieval, and display of analogies, patterns and anomalies in existing knowledge." (p.214).

Also important are the flexibility of the access to the collection, by providing browsing facility, the interdisciplinarity, organization and management of information services and the utilization of information technology.

BAY, J. CHRISTIAN, 1941:

"The idea of knowledge precedes knowledge itself. Any science or art, detached from its philosophy is dilettantism." (p. 150)

Philosophy of librarianship reflects the development of ideal models of library. Scientific idea is an idea expressed philosophically. Library science is the knowledge and skill needed to recognize, collect, organize and utilize printed records in terms of the patron need; collecting rather than accumulating, organizing rather than arranging library material.

Semantics connect linguistics with history of civilization. Knowledge of the meaning of words prevents false analogies, it allows for measuring associations in thoughts and phrases, contributing to the precision in communication.

BEAGLE, DONALD, 1988:

Research ought to be generalizable in the context of one or more theories central to the discipline, providing epistemological definition of information, and metaphysical principle of interrelationships between elements of the total knowledge, applicable to the theory of librarianship.

Library and information science developed in the context of a mechanistic world-view of behavioral sciences. It included Newtonian physics, behaviorist psychology and the computer. This approach may not be applicable today because of the uncertainty principle of quantum mechanics, relativity of space, time and subjectivity of empirical observations.

The mechanistic theory asserts that the world is composed of building blocks (indivisible atomic or sub-atomic particles). New approach views the world in terms of universal flux of its events and processes. The concept of unity or interconnectedness is one of the basic principles of a holistic philosophy. One cannot comprehend any single entity without considering its context or environment taken as a whole.

David Bohm developed a model of the holomovement dealing directly with the fragmentation of research. He proposes a new paradigm of underlying wholeness which he calls 'the implicate order of the holomovement.'In this theory, order is a potential context for theory building in library science. Knowledge is viewed as an organic whole, an ordered growth process comparable to life itself and contradicting entropy. Knowledge growth is a self-ordering process. Entropy, a concept in mechanistic world-view, in its prediction of eventual disintegration of order contradicts library's developmental model, in which order balances entropy. All that entropy says is that everything is placed between the initial maximum and the terminal minimum of energy. Humanity gains leverage over the entropic physics by performing increasingly valuable work with the decreasing amounts of energy: entropic physical universe is balanced by negentropic metaphysical universe of human knowledge.

The distinction between mechanistic and implicate order is illustrated by the concepts of 'volumes' and 'titles'. In mechanistic order, books are considered as individual physical units, but their titles exists in the context of the abstract aggregate, one title citing another, together representing totality of knowledge; while volumes may duplicate the same context only. "Like the organism where each cell contains encoded information about the structure of the whole, each constituent library contains a terminal with access to an encoded representation of the totality of which it forms a part." (p.35)

The wholeness of the flowing movement, according to Bohm cannot be defined explicitly; it can be known only implicitly, from the stable or unstable forms and shapes which can be abstracted from its movement. Knowledge is a process subsumed in a larger flux from which relatively stable shapes and representations can form. It manifests order in which each part grows in the context of the whole, it does not exists independently or 'interact' without itself being affected in such relations.

Holomovement represents a multidimensional reality whose totality is immeasurable and undefinable, because we are part of it. Representation and organization of knowledge in libraries embodies implicate order. "Under the contextual world-view presented here, libraries are not some negentropic aberration from a fundamental law of cosmic disintegration, but rather are an expression of an integrative law of underlying order. That law, that flux, may never be ultimately definable by us (because we ourselves function within it), but certain characteristics like the implicate order may be abstracted from it and seen in a variety of phenomena, including libraries." (p.43).

BEASLEY, K.E., 1974:

The author discusses "political and social forces altering the planning, decision-making and accountability functions; while cooperative movements are admirable, inherent difficulties are formidable." (p.180)

BECKER, B.W., and P.E. CONNOR, 1982:

This study focuses on root causes of reading behavior. It demonstrates the dependence of reading behavior on fundamental determinants of individuals personal values, their attitudes and behavior.

Value is defined as an abstract ideal, positive or negative, not tied to any specific object or situation. The attitudes are personal values reflecting person's belief about ideal conduct. Values are global beliefs, the attitudes are cognitive and affective orientations, personal beliefs manifest one's fundamental values and consequent attitudes. Their impact on reading varies. 1. Heavy book readers focus on achievement-oriented values, less on traditional religious, social or family relations; they are more inner-directed, delaying gratification for accomplishment of distant goals. 2. Male heavy readers possess values that stress competence and concern for accomplishment, women heavy readers are inner-directed and tend toward delayed gratification. 3. Value systems of the sexes are far from identical: heavy readers are more likely female, more educated, within the 30-39 age group. There is no obvious relationship between reading and TV watching, they are not mutually exclusive. 4. Libraries satisfy the needs of readers and encourage greater levels of reading, and should reflect different strategies. (a) Potential heavy readerships depends on 'values clarification' or 'value sensitization'. (b) Light or non-readership suggest changing people's values which may be difficult or morally undesirable. (c) Naive promotional efforts, short-run in duration are highly unlikely to success (e.g., Library Week).

BECKER, HOWARD S., 1965:

Although large public libraries may be equipped to deal with many social problems, they have no role in some of them such as solving social welfare, without transferring library into a different institution.

BECKER, J., 1978:

We are living in a period of stressful times brought on by shifting values, and acceleration of changes. This situation applies to libraries which are affected by eroding tax support and inflationary increases, media competition, information expansion, and commercial involvement in information.

Libraries automate to reduce labor cost, and abandon the self-sufficiency concept by entering into networks interdependence. Continuing advances in computer and communication technology create a quiet revolution by merging and converging with related technologies (e.g., printing, photography). Together they dramatically change information transfer by personalizing the services to the public, improving communication with other libraries and users, and increasing internal productivity.

Libraries are seen as one of the principle nodes in national information system and become links in the network of diversified information and its formats. Stake-holders include authors, researchers, publishers, librarians, documentalists microphotographers, archivists, information brokers, computer specialists, communicators, network specialists, systems and information scientists.

US National Policy has not yet been formulated; it will involve social engineers to introduce the changes in the pluralistic society and to unite all decentralized units.

BEHRENS, SHIRLEY J., 1994:

As an abstract concept information literacy is a metaphor representing "the ability to use information, or possibly the possession of a knowledge of information." (p.309) The term 'information literacy' was introduced by Paul Zurkowski in 1974, who focused on the use and application of located information. The meaning of the concept changed, reflecting adjustments to the increased need for information. In the 1980s the emphases was on integrating the teaching of information skills with general curriculum. In early 1990s a major educational issue was information literacy involving librarians working in a partnership with teachers.

BEKKER, JOHAN, 1976:

In this dissertation, philosophy is considered in its relations to: (a) professional ethics, and (b) philosophy of librarianship. Library phenomenon must be considered in the context of knowledge. "Knowing something means knowing its relations to something else" (Nitecki, quoted by J. Bekker, 1976, p.168).

Bekker considers philosophy in terms of its (a) comprehensiveness in approaching totality of the ultimate reality in librarianship, (b) by providing conceptual clarification of the terms used, and (c) by developing system of principles guiding library practice.

Philosophy of librarianship is defined as a frame of reference delineating the discipline's scope and unity, by (a) explaining library purpose (the 'why' of Irwin and Broadfield); (b) identifying its functions (as means by Nitecki and Christ), and (c) describing occupational ideals (as guiding principles by Foskett and Benge). The above definitions are considered as three dimensions of one basic approach.

The philosophy of librarianship differs from its policy (it is more fundamental), and from ideology (it is an essence independent of ideology). It is not a theory of librarianship but a part of it (it is all inclusive). Its essential function is to explain and justify the discipline (Caldwell), to clarify its roles (Dalton, Foskett), to search as a base for creativity (Reddy), and as a way to adjust to changes (Shera), by providing relevance (Thompson), and certainty (Wheeler), Bekker defines 'purpose' as a synonym with an ideal, objective, end, aim, and goal. It denotes the direction and concentration of efforts. And he identifies four basic purposes of the library as educational, informational, research, aesthetic and recreational.

Major library functions (i.e., means toward ends identified by library purposes to collect, organize, preserve, and the physical arrangements, retrieval and dissemination of recorded information) describe library activities but are not its philosophy. Shera defined library function as the maximization of the social utility of graphic records. Bekker's own definition of library basic function is "to optimize the value of recorded information for mankind." (p.147)

Bekker summarized his review of library philosophy by quoting Eastlick: "Every profession should have its philosophers - individuals who can observe the vast panorama of world events and synthesize the stresses and strains, the new and the obsolete, the wise and the foolish, into recognizable patterns." (p. 107).

BELKIN, NICHOLAS, J., 1975:

The author identifies three Soviet approaches to information science. (1) The philosophical approach stresses variety and reflection. Knowing is based on reflection of a given object's variety. Information is a basic property of matter and consciousness ('What information is necessary for the description of some object X?'). (2) The pragmatic methodology defines parameters of informatics by concentrating on specific aspects of information and observing their behavior.('What information is contained in object Y about object X?'). (3) In the semantic approach each information relates to different kind of knowledge. ('What information can object X extract from object Y?')

All three approaches agree that information science (informatics) is a special science aiming at maximizing communication for specific social objectives or purposes. Each approach focuses on different aspect of organization: philosophical on the variety, pragmatic on the system of documentary communication and semantic on the text. Text can be considered as a sign or a message. Informatics addresses not information but metainformation (the distribution and organization of scientific information).

----- 1978:

In the search for a suitable definition of information, the author reviewed a number of printed definitions and identified variety of frameworks used. They included communication systems, philosophical assumptions and pragmatic analysis of information phenomena. Each framework suggests different aspects of information: as a fundamental category of matter, its property, structure or organization; as the probability of occurrence of an event or reduction of related uncertainty; as an event in reading the text, as data in decision-making or communicated information; and as the message itself.

The context of information science can be either methodological (utility of the concept), behavioral (information related phenomena) or definitional (context of the concept).

The author provided three major generalizations. (1) Concepts developed within the context specific for information science were most successful. (2) The concepts that failed did not met the relevance or operational requirements, they did not reconcile the need for prediction with individual-specific effects of information. (3) No definition so far proposed were fully successful; their inefficiencies may be corrected by applying them to specific situations.

Belkin reviewed various contributions to the definition of information science in terms of their specific contexts.

(a) The significance of an information concept: Goffman focused on information related phenomena rather than information itself. Yovits and Otten proposed models of physics, Artandi preferred potential utility, Brooks developed mathematical 'fundamental equation of information science', while Russian theoreticians and Kuhn emphasized the discipline's paradigms,

(b) The requirements of the definition included Gindin's focus on semantics, Wersig's concept of uncertainty and Marzocco's context for information.

(c) Information concepts: Salton, Robertson and Hillman provided analyzes of conditions needed for information retrieval.

(d) Classification of information concepts were proposed in terms of social consideration of information as a commodity (predominantly a Marxists interpretation), or were related to domains of information phenomena (Belkin & Robertson. Rathswohl)

(e) The theory of selective information is represented by Shannon's information as a measure. variously interpreted (such as Artandi s or Belzer semantical interpretation).

(f) General information phenomenon is represented by Otten's notion that information science ought to be a general science of information.

(g) Information as category and as property of matter is evident in Ursul's notion of information as a property of matter and consciousness.

(h) Formal semantic information is provided by Shreider's concept of metainformation as an organizer of semantic information in the text read.

(i) Information was viewed by Pratt as an event in communication; by Wersing as a reducer of uncertainty. by Yovit as a data in decision-making, by Farradane as a surrogate for knowledge. by Thompson as a structure emerging from the event, rather than the event itself. and by Belkin and Robertson as that which transforms structure.

---- 1984:

Information transfer is defined as an interaction between the user (initiator of the transfer), the knowledge resource (text) and the intermediary mechanism (mediator).

The essay concentrates on the intermediary function: "why it is necessary, why it is problematic, what its important features are; how it might be improved." (p. 111)

The main focus of the paper is on understanding the user's needs, expressed in the problems to be solved, goals aimed at, or intentions of the user. The results is a development of cognitive models or images for each component of the information system, their counterparts and themselves.

BELKIN, N.J., and S.E. Robertson, 1976:

Information science is defined as a facilitator of communication between human beings. It is based on two premises: (a) it is a problem-oriented discipline concerned with transfer of information from the initiator to the receiver of communication; (b) all types of information are characterized by change and structure.

Text is defined as "a collection of signs purposefully structured by a sender with the intention of changing the image-structure of a recipient." (p.201)

The proposed concept of information is free from the impact of ethical intentions of the sender and receiver of information, by making an ethical assumption that the receiver always seeks the information that satisfies his needs.

BELKIN, N.J., and A. VICKERY, 1985:

The interaction between the user and intermediary in the information retrieval model is defined as a cooperative human to human goal-oriented dialogue, based on external resources, performed on linguistic and non-linguistic levels.

Philosophy of language stresses the cooperative aspects of conversation and was significantly influenced by J.L. Austin's 'performatives', John Searlye's 'speech act' and Paul Grice's 'conversational implicature' theories. Grice developed the 'cooperative principle' explaining the logic of conversation: "Make your conversation such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged." (p.52) The cooperative principle together with the quantity (informative), quality (true contribution), relation (relevant), and manner (perspicuous) categories, clarify the nature of cooperative conservation. (pp. 50-53)

Other approaches in understanding conversation include (a) linguistics (Chomsky's syntax and language competence), (b) linguistic and logic (Lakoff's study of meaning), (c) Sociolinguistics interaction (Hymes's communication behavior in social setting), (d) cognitive psychology (Hollnagel's communication environment), and (e) computational, natural language systems of Grosz, Cohen and Sidner and interactional interpretations of Grice, Gordon, Lakoff, Brooks, and Belkin.

BELL, BERNARD IDDINGS, 1952:

Butler was a scholar in the history of the communication of thoughts and the role of print in it. In his theological approach he went beyond process by focusing on function and value, thus adding meaning to the process itself. The library is a subject of "directional movement under a categorical imperative which cannot be explained away by any argument, naturalistic or idealistic." (p.175). It can be understood only in terms of its services, processes and functions considered together.

BELTH, MARC, 1977:

The author considers a model as an instrument of thinking and as a process of testing, analyzing analogies and reconstructing models for more effective interpretation.

The concept of a model involves: (1) perceived or perceivable objects or events that are (2) considered in terms of a theory or hypotheses; and (3) provide meaning and relationships for those events or objects by observation and logical inference.

-"Nothing in the world is, of itself, a model of anything, or for anything, until it has been deliberately established as such by somebody. (p.57) Models are mental concepts developed for close examination of events they model, aiming at the resolution of empirical and conceptual problems. By themselves, they are not relevant, similar or corresponded to each other, but are a part of an invented perception of completeness. They establish a psychological distance between the perceiver and the object or event perceived, thus avoiding subjective perception or passive reaction to stimulus. A model is not "a logical or mathematical formula devoid of any experiential content. It is deliberately constructed whole of some experienced event that of itself does not show such wholeness or unity." (p.58)

BENGE, R.C., 1957:

Carnegie felt that the responsibility for addressing social distress is the function of the government: libraries should be responsible for the diffusion of knowledge, through which society's cultural welfare could be established.

The 19th century focus on individual's self-development is less relevant because of the availability of general education system. Yet, the contemporary stress on information, disregarding cultural and educational functions of public library, is equally limited. Any new theory will recognize the library educational, conservational, informational and recreational functions to satisfy individual patrons needs; the distinction lies not "in the type of material collected, nor in the type of libraries which supplies it, but in the purpose for which an item is required at any given time." (p.52)

---- 1970:

The theme of this book is a review of relationship between culture, communication and libraries. In the chapter on philosophy of librarianship, Benge states that as a total systematic structure or system it does not exist by itself. However in a more limited sense, philosophy of librarianship stands for the pursuit of truth, for principles guiding the action, and for theories explaining reality. It is related partly to science (e.g., information retrieval), partly to art (e.g., book selection) and partly to social processes (e.g., ethical, value judgements).

Ranganathan's 'five laws' are considered not as scientific but moral laws or ideas expressing professional principles of conduct or service. They are limited by a lack of social context.

Irwin represents a traditional view of library performing custodial function. L.R.McColvin, Broadfield and Lawrence Clark Powell represent the 19th century's liberal, progressive philosophy of library as a secular missionary in its contribution to popular education and enlightenment. This approach is inadequate, because it does not relate to mass culture.

D.J. Foskett and Ronald Staveley represent the philosophy focusing on the information process itself, overlooking wider social and cultural issues . D.J. Foskett defines library philosophy as professional sets of ideas, Staveley relates it to the fundamental beliefs, defined differently by philosophies of Platonism, pragmatism, logical positivism or Marxism.

Raymond Williams advocates communication as the base of the philosophy, and Shera's social epistemology concentrates on the nature of knowledge and its impact on society, excluding however social values and their impact on knowledge.

Benge concludes that philosophy of librarianship searches for answers to three basic questions: (1) what is knowledge, (2) how it is put to work, and (3) for what purpose? (p.253)

---- 1972:

This book expresses a personal view on communication, discussed in the context of the Third World search for self-identity. The book expresses an attitude rather than a philosophy by attempting to understand what kind of spiritual and material knowledge is available to an individual, and how it impacts on his personal identity.

A gap between appearance and reality is created by a break in cross-cultural communication. The gap is illustrated in library linear classification that cannot be easily adjusted to the changing cultural environment. Similarly, library technical specialization formulates a reductionistic concept of a part as the whole of the profession (e.g., in information retrieval).

The overall focus of the book is on personal human encounter: "the struggle for our own meaning is both necessary and rewarding, and there is always a consolation... that we are alone together." (p.203)

L.Estabrook (1973) in his review of the book points out to the similarity between Shera's epistemology and Benge's focus on the importance of interaction between knowledge and society, and by asking 'what' and 'how' we know about ourselves and others.

---- 1984:

Author questions the purpose in various formulations of library theory. He maintains that new approaches to librarianship did not produced new theories, but mere assertions. The humanistic attitude of the 19th c.librarianship dedicated to the dissemination of knowledge is substituted by new technology's concern about process and function thus obscuring the ends.

Neither technology nor information exists by itself. Both are parts of systems of values, the culturally defined 'ideal' values of life. Informatics should reflect the correspondence with the societal cultural, not merely material, values.

Shera manifested similar misperception by considering his social epistemology as an impact of knowledge on society, overlooking the society's impact on knowledge.

Obstacles to information are not technical but political, social and psychological. Positivism in its doctrine of 'value free' society, concentrates on rational perceptions only.

"The world does not contain information. It is as it is. Information about it is created in the organism through its interaction with the world. To speak about storage of information outside the human body is to fall into a semantic trap." (Illich, 1975, quoted by R.Benge, 1984)

Properly defined information should shift the focus from data to the social interaction as a whole. " The 'retrieval' is social as well as technical and depends on a complex network of forces which need to be more carefully analyzed." (p.219)

BENIGER, JAMES R., 1986:

Control Revolution relates to "a complex of rapid changes in the technological and economic arrangements, by which information is collected, stored, processed, and communicated and through which formal or programmed decisions can effect societal control." (p.427)

It started in 1900 in order to restore lost purposes in political and economic controls in information technology and communication. All activities should be purposeful thus requiring individual and social controls, which in turn depend on the kind of information processing, programming, decision and communication.

In the emerging Information Society increase in the speed of material processing was not caused by computer, but merely augmented by it. (Charles Babbage anticipated computer as a way of increasing the speed of operations).

"The rise of the Information Society itself . . . has exposed the centrality of information processing, communication, and control to all aspects of human society and social behavior." (p.436)

BENJAMIN, PHILIP M., 1962:

Philosophy of book selection is personal, based on the librarian's evaluation of the value of selected material to the reader, and to the philosophy of education sustained by parental institution.

BENNETT, GEORGE E., 1988:

The similarities and differences between the concepts of library and information science are based on hermeneutic theory of interpretation of the content of essays (a 'discourse analysis'). The approach examines motivations of their authors in terms of changing metaphors reflecting changing social environment of librarianship.

Bennett makes a distinction between library theory (approximating scientific research) and philosophy (such as a non-empirical theory of classification). But since the information explosion made the earlier classificatory schemes obsolete, "the conventions of 'science,' 'research,' and 'theory' actually represent the inadequacy of librarianship in academia." (p.114)

BERELSON, BERNARD, 1938:

Impartiality should not be confused with freedom, objectivity and fairness, or with negation of the library responsibility to serve useful social purposes.

There is no virtue in impartiality or partiality themselves. "The question is not whether we should be partial or impartial . . . but rather what we should be partial to or impartial between." (p.88)

Democracy requires understanding of social changes by apprehending differences between political systems, intelligence and stupidity or prejudice, public welfare and special interest, between reason and force. "Knowledge has social as well as individual utility . . . the library exists not for the sake of the library, but for the sake of society; its activities must therefore be judged in a social frame of reference." (p. 88)

---- 1939:

In response to Fry (1939) criticism of his stand on partiality, Berelson points out that "it is a gross non-sequitor to say that because social science is not an exact science, therefore we cannot 'educate' and 'encourage' and 'teach' and 'act' on the basis of what we do know." (p. 55)

BERGEN, DANIEL P.

Bergen is critical of conceptual approach in library philosophy, preferring instead a contextual focus on environment and on the procedural empirical methodology. He proposes a theoretical bibliographical system, that would redirect library philosophy from metaphorical to empirical approach, bridging formal and informal communication in information transfer. He is critical of idealism of Popper, Kaplan, Shera, Wright and Nitecki and opposes the separation between structure, substance and form (which are timeless) and matter (which is timefull).

His argument is based on the following assumptions. (a) The philosophical function of librarianship is to assist in refutation (falsification) of theoretical propositions by providing material that would refute rather than support the hypothesis. Refutation provides more empirical ground, fewer variables and greater ingenuity to invalidate unproven assumptions. (b) Library provides access to 'claims of knowledge' not to knowledge itself. Knowledge is not an independent entity. (c) Structure should not be divorced from substance, but it should be considered in relation to content.

---- 1962:

College library is often not considered an essential element in the education of students because of an almost total lack of congruence of expectation and performance between the library, faculty, students and administration.

The most important implication for college librarians in understanding their library's ecology is its possible effect upon the decision making process in the governance of the college.

---- 1963a:

Assessment of ecological forces on the library includes cultural and behavioral approaches to social understanding of environment by examining subcultural uniqueness of the library patrons.

The essence of ecological approach is its nonuniversality and its low validity for other than a specific institution in a given time and space. Hence the tendency to imitate the organization of other institutions should be avoided. Being in society but not for society creates an untenable dichotomy. The organizational success of the library should be measured in terms of its function rather than in fulfilling its prior goals.

---- 1963b:

Librarians and teachers belong to different and often mutually exclusive subcultures. The integration between the two groups can be accomplished when teachers and librarians share part of each other responsibility, as proposed by L. Shore in his library-college model.

Librarianship should shift its historical-bibliographic emphasis to social epistemology, which provides not only a systematic study of knowledge and its forms, but also substantial insight into the interaction between knowledge and its users.

Library technical services are dominated by a procedural perspectives focusing on efficiency of output emphasizing goal-attainment functions. Subject specialists are overly conceptual (i.e., ideological). Acquisition and reference librarians are contextual (neutral mediators in acquisition and reference) and are more realistic by emphasizing non-goal-attainment. [Bergen acknowledges Nitecki in this taxonomy.]

Shera maintains that librarianship can benefit from the insight of general systems into the structure, organization, and availability of human knowledge. It can bring order and stability to recorded knowledge. The relationship between the two disciplines is closely related and converges on many points: both are interdisciplinary and concerned about utilization of information by the nervous system, both provide links in communication chain, and both are involved in language, symbolism, abstraction, conceptualization and evaluation. Both are epistemological.

---- 1964:

Bergen rejects the dichotomy between structure and substance. Key in the development of a viable system of access to knowledge is the resolution of a difficult problem of relations between concepts, reality and concepts to concepts.

He maintains that librarianship ought to focus on: (1) concepts, (2) the substance or empirical phenomena explaining the interrelations between concepts, and (3) the nature of the relationships between theory and facts. the abstract and the concrete, the model and what is modeled.

----- 1965:

Historically, the growth of knowledge alternates between (a) empirical investigations of connections between events overlooking special concern for the significance of these events and (b) rational investigation of connections between concepts, without concern for their relations to experience in speculative philosophy and logical-mathematical hypothetico-deductive theories.

Any imbalance between the two approaches is corrected by internal logical equilibrium focusing on holistic approach of general system.

Holistic approach, in contrast to reductionism, implies that the whole is greater than its parts, and that systems, elements and behavior are controlled by processes which are homologous or at least isomorphic.

Major implication of general systems in the theory of librarianship is its organization of knowledge for transmission from one generation to another. Library system in support of general systems is both information and document oriented. It should be (a) an open system flexible to accommodate shifting relations between metatheory and empirically based models, and (b) inductive and deductive, providing information on different systems.

It is important (a) to distinguish between abstracted, empirically determined and conceptual systems, and (b) to identify isomorphic principles of randomness, uncertainty and organized complexity that are evident in social as well as in physical and biological systems. In this sense systems theory creates new information (negative entropy).

Intellectual disciplines always reflect efforts to organize nature, not the nature's structure, thus leading to a distinction between (a) the two structures of knowledge and nature, (b) conceptual and concrete systems, and (c) the concepts of macroscopic (knowledge as a whole) and microscopic (knowledge of particular disciplines) views of the world.

In philosophy and religion the most important archetypes are 'saving of wisdom' and 'spiritual rebirth'. Corresponding notions in science are the concepts of 'themata', the nonverbalized yet continuous aspects of scientific theory; which are unverifiable and unfalsifiable. (e.g., conservation of energy).

There is a functional parallelism between themata and archetypes, and general systems theory can provide isomorphism between the two concepts by organizing reality as perceived by both the humanist and the scientist.

A procognitive system of Licklider in human cognition relates recorded information to the cognitive structure (a map) of an individual allowing for a computer linkage between a large random access storage capacity, teaching machine and the sources of knowledge generation.

Here conceptual and factual knowledge would replace the physical artifacts (documents). A library system is document-oriented for humanists and social scientists, and an information subsystem of evaluating, storing and retrieving information for other scientists.

General system principles could serve as organizers in the procognitive system by linking human cognition with computer structure and as specifiers of various knowledge relationships.

The major difficulty in the system theory is the 'fallacy of misplaced concreteness', the confusion of invisible, theoretical entities with concrete, observable ones. Hence, the systems may be looked as a set of physical or conceptual entities that are mutually interrelated.

---- 1967:

The theoretical debate within librarianship is between the Baconian approach of inductive empiricism and the deductive theorizing. The range of bibliographic sources extends from broad literature coverage and low information (e.g., comprehensive indexes focusing on location) to limited literature coverage and high density information (e.g., specific information focusing on its consumption). The amount of information an inquirer brings into the search determines which of the two ends of the continuum will be more useful.

Each discipline should have: (1) deductive philosophers, not preoccupied with empirical correlates of their thoughts; (2) empirical generalizers searching for laws of empirical inquiries; and (3) raw empiricists to gather raw facts and not overly concerned with the conceptual contexts.

---- 1971:

The fundamental purpose of the library is to enhance communication between authors and readers. The problem is the audience's heterogeneous approach to information, ranging from extreme abstractionism to factual concreteness. Hence there is a need for better understanding of the collective psychology of the patrons, the impact of technology of communication, and the cultural unconsciousness of the unexamined assumptions.

---- 1978:

Conversion of information into knowledge is a condition of system effectiveness in which each document is studied within the universe of all other documents on the same subjects, weighed, assigned status and provided with a position within the existing cannons of scientific knowledge.

The adequately revealing statement assigned to a given document includes ideology governing a document (e.g., Marxist), its perspectives (e.g., conflict or consensus), its school of thought (e.g., Hayekian economics), and its methodology (e.g., synthetic or analytical).

Abstracting services are of value for providing information, not for their referential potential. Encyclopedia articles, state of art reviews, catalogs, indexing, abstracting and bibliographies are not by themselves sufficient for providing adequately revealing statements, they do however provide specific items of information.

---- 1980:

Bergen discusses three objections to J.Z. Nitecki's model of metalibrarianship: two dealing with infrastructure and one with superstructure.

(1) Infrastructure of formal relations: knowledge cannot exist independent of minds and records; (Knowledge is of a different genus than book and/or user.)

(2) Metaphors are self-confirming (they codify observation so decisively that they become self-confirming).

(3) Superstructure: Bergen reservations are four-fold:

(a) The three metaphors do not embrace the totality of librarianship. According to Bergen, procedural (Pd) and contextual level (Cx) refer to the present, while conceptual (Co) to the future. As metaphor and counter-metaphors Pd and Cx cannot be separated, and considered independently of psychological impact on the relationships between the patron, information carrier and its content.

(b) The model is too complex: it appears to be more a product of accretion than design. He would prefer to reduce the relationships to the book and the user, and "would recognize proceduralism, contextualism and conceptualism into a more unified metaphoric tool in which proceduralism and contextualism interact closely as metaphor and counter-metaphor and in which the effectiveness of conceptualism, as it looks to the future, is directly contingent upon the sophistication of that interaction." (p.13)

(c) The model manifest some 'jerkiness' and 'disconnectedness' begging for 'tightening an synthesis' . . . "somehow the center does not hold." (p.14)

(d)) Bergen compares Nitecki's epistemology (introduced in 1964) to that of Popper's model (1964, 1972). Popper's material, physical world is similar to Nitecki's generic book; mental, psychological world (observations, thoughts and feelings) is similar to user; and abstract product of mind, the world of theories, is similar to knowledge. [N.b. Nitecki disagrees. This is a wrong comparison; Popper's physical world is similar to Nitecki's proceduralism (Pd), mental world to contextualism (Cx) and abstract world to conceptualism (Co)]

Popper's world of mental products and Nitecki's concept of knowledge are the main issue of disagreement. Bergen feels that the modern trend is toward dualism (e.g., Chomsky's dyadic linguistic model), and that knowledge can not endure independently of our minds and records and that other mental products, however abstract are contingent rather than autonomous. His criticism is addressed in full in Nitecki's more recent essay. (1993)

---- 1981:

The purpose of this paper is to demonstrate that in a successful theory ideas and matter are interrelated, they are less monolithically idealistic and more pluralistic.

Bergen criticized various contributors to philosophy of librarianship for their platonic approach.

Abraham Kaplan notion that both philosophy and librarianship focus on structure rather than substance, and on form rather than content is seen by Bergen as a metaphysical approach opposing the pragmatism of library practitioners.

C.H. Rawski shares the same focus on form at the expense of substance. J.Z. Nitecki's pluralism of three metaphors of proceduralism, contextualism and conceptualism is criticized for idealizing the concept of 'knowledge'. C.H. Wright's metaphysical approach, detaches theory from library practice. And A.Fairthorn's concept of library philosophy, similarly to mathematical symbols, is free from the substance.

Shera in his social epistemology interrelates idealism with empiricism. In his idealism, knowledge conditions matter, his empiricism stresses the importance of social effects of knowledge, but both are subject to the ideological interpretation.

Bergen agrees with Butler's call for 'objective realism' that includes empirical investigations of sociological, psychological and historical aspects of librarianship.

In effect, he does not oppose idealism, but argues against its dominance in the philosophy of librarianship.

Bergen concludes that the future theory of librarianship will not be confirmable but refutable. It will include material as well as conceptual approaches, Aristotelean as well as Platonic viewpoints, including both theories of facts and of values.

---- 1984:

Bergen maintains that librarians and information scientists provide access to claims to knowledge rather than to knowledge itself. Claim to knowledge is a claim to truth (P.Wilson), thus involving reference to reason, to the evidence of the senses, to rational and empirical reasoning, to a definition, or to an individual's report on his inner state.

Dissociated from the term "claim," knowledge refers to subjective and personal knowledge which may be true or false. He recommends Wilson's concept of skepticism, of neither accepting or rejecting the possibility of knowledge.

Bergen discusses four interpretations of claims to knowledge: (1) inductive, (2) hypothetical, (3) definitional, and (4) introspective.

(1) Induction is an assertion that the future will resemble the past, its base is psychological, not logical. It appears

incapable of vindication, although statistically it may be partly justified.

(2) Hypothetical approach is based on its falsifiability; more verifiable hypotheses will replace the less defendable. Bergen does not reject the idea of falsification in principle, but questions its practical application, since we don't know when the process itself is completed. Scientists hold on to a theory not because it is falsifiable, but because it offers plausible explanation.

(3) Definitional search for truth is unsatisfactory because there are no objective facts or truths, only assertions. Facts are ethnocentric products of time and cultural outgrowth of definitions.

(4) Introspective approach relates to consciousness. It is linguistically structured and possibly unconsciously motivated. Such motivation can not be inferred from outward behavior.

Since last century, American librarians accepted representational realism maintaining that the world is independent of mind. Here 'informing means 'a process of in-forming,' i.e, 'forming' a passive mind, by changing or reinforcing mental images. Pratt calls it 'emmorphosis'.

Bergen ends his essay with an inconclusive suggestion that librarians "should devote less time to designing and refining system of access . . . and more time to other projects." But he does not specify what kinds of projects. (p.22)

---- 1987:

Bergen criticizes Harris dogmatic approach to philosophy of librarianship and calls for a non-partisan approach to ideologies. Harris's major defect, according to Bergen, is his arrogance of thinking that he knows the best.

Harris' critique of librarianship, according to Bergen, is rooted in Marxism's attempts to demythologize librarianship. His main problem is his Gnosticism: Harris is convinced that he is privy to the Truth about library services denied to those who do not accept his Hegelian, idealistic Marxism philosophy.

Harris maintains that American librarians are addicted to the idea that society is pluralistic and captive of positivist epistemology, based on empirical testing of formal hypotheses rather than the pragmatics of trial and error.

The pluralism explains librarians neutrality toward different group interests, and its positivist epistemology accounts for apolitical and value neutral approach justified by the notion of intellectual freedom.

Positivism results in a trivial research in librarianship, and with pluralism it allows for development of many small ideas (I.Berlin's' foxes') while Hegelian Marxists concentrates on big concepts and large ideas ('hedgehogs'). Harris maintains that Hegelian Marxism must replace pluralism-positivism.

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BERNATOWICZ, K., 1987:

The essay reviews terminological confusion about information use and its impact on research. Information activities are defined as sets of information processing, collecting, storing and retrieving, aiming at accumulation of cultural accomplishments for social and economic purposes. Information needs are perceived as natural, socially motivated, functions. The need may be created by desire to learn, or to accomplish certain goals.

Empirical, sociological and psychological studies of information needs can be divided into two major categories: (a) where does the information come from, where it is needed and for what purposes, and (b) in what way and to what extend can the demand of users be satisfied.

Psychologist divide 'need' into: physiological, emotional and cognitive. They are characterized as follow: (1) The demand for information is determined by social roles and needs. Information is of instrumental value in accomplishing one's goals. (2) The value of information depends on its applicability, accessibility and social factors that create needs. (3) The essence of information is 'seeking information to satisfy needs' (Wilson, 1981). (4) Sociological approach stresses the importance of cultural-social-personal system which affect users behavior more than their needs for information itself. (5) Ethical values and norms must be socially acceptable. (6) Social needs include: affiliation, communication, organization, emotional ties, conformity, socialization, social applicability, appraisal, acceptance, participation, protection and autonomy of individuals. (7) The types of users are potential, expected, present and beneficial. (8) Demands for information can be shaped by information supply for specific information to satisfy a demand.

Research methodology should address the following issues: (1) not why one uses information but what is the need for it; (2) the need should be studied as a willingness to learn about world and about social advantages of having information; (3) where information come from; (4) how a demand for information can be satisfied and (5) the shift from studying information sources to information role in the life of a user.

BERNIER, CHARLES L., 1985:

Ethics is defined as a science of survival. It is determined by experience, experiments and measurements. It is a unitarian definition stressing usefulness of desirable behavior by distinguishing between facts and fiction. Ignorance is dangerous for an individual as well as for a society, since it puts one at the mercy of an unethical individual or of the organizations who know, what that individual does not know.

Because of increased specializations there is an ethical need for cooperation, as an option for survival. "Information science and scientists are seen to be ethical by promoting survival through the use of knowledge." (p. 212)

BERNINGHOUSE. DAVID K., 1972a

The proposed philosophy of librarianship requires involvement of librarians in social issues, providing access to all viewpoints. Intellectual freedom demands full access to all facts and theories in order to find best solutions to problems. It should take a precedent over any other principles. The resolution of a dilemma between the role of advocacy and neutrality on social issues will determine future philosophy of librarianship.

---- 1972b:

The social responsibilities and authoritarian roles of mass media in the Twentieth century emerged from: (1) Authoritarian approach of 16th-17th century of absolute power; (2) Libertarian view of 18th-19th century rationalism and natural rights. Social responsibility view aims at provoking discussion on conflicting issues, as a part of the self-righting process of truth and free exchange of ideas. The authoritarian view supports totalitarian system by surveillance and obedience.

In totalitarian states librarianship is a part of communications systems to 'educate' people. In Western democracies libertarian theory of press based on philosophies of Milton, Locke and Mill calls for dedication to truth through objective reporting. Individual cannot survive without some understanding of reality.

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The author points to the antithesis between social responsibility of librarianship and the Library Bill of Rights, with library press taking side of social responsibility view.

BERRY, JOHN, J..1973:

We often rewrite library history to justify contemporary goals. 19th century goals of liberal education to assimilate new emigrants, were changed into new library social services such as outreach program, prevention of illiteracy or racism, by provision of information. Changing goals are justified by historical precedents, although most of them are the results of contemporary social pressures for change.

---- 1977a:

Library profession defined as teaching patrons the use of library tools in solving their own problems contradicts the insistence of having exclusive professional knowledge to assist patrons in that use.

Berry suggests that librarians should abandon the status-seeking drive for professionalism, and instead focus on acquiring, organizing and providing the material, teaching others how to use the library (i.e., be their own librarians), and allow paraprofessionals to assist the patrons in the use of library resources.

---- 1979:

Objectives of public library are directly related to the objectives of the society. Quoting Shera, Berry states that the institution such as family or state determine the pattern of society; and the agencies such as school, library or museum are determined by that pattern. Public library always provided one-to-one service, organizing all knowledge for single individuals. This is a unique role. all other agencies serve the public, not an individual.

---- 1981:

This is a discussion of two conflicting models in librarianship: (a) marketing ideology focusing on information as a commodity, and on the techniques for providing information products: (Wasserman, Pauline Wilson) and (b) self-reliance of individuals, reducing their dependence on market system (Toffler, Illich).

---- 1982:

Shera's basic message was to bring man and book together for the benefit of individuals and through them of society. Noted also were Shera's positions on research (often reinventing the wheels), on profession (call for patience), on specialization (based on synthesis of librarianship), and on the future (anticipating unified theory of librarianship).

New technology, economics and resulting social changes jeopardize fundamental American rights to information. The conflict between information producer and consumer over copyright, the control of the information's 'distribution chains' by publishing and media industry call for philosophical and organizational tools to fight for societal control of databases and communication channels. Professional information is interwoven with politics. There is a need for new philosophical base in librarianship to defend intellectual freedom.

---- 1987a:

Attempts to replace the terms 'library' or 'librarian' by terms such as 'manager' or 'specialist', weaken librarian's self-identity, and overlooks library role in society. It is unfortunate that this trend takes place at the time when the need for providing information to individual is greatly increased.

---- 1987b:

Ethics was a predominant topic of the 50th annual conference of ASIS. Its major conclusions included: (1) technology is not ethically neutral; (2) information as science calls for its quantification with dollar value; (3) value of information itself is subjective, depending on situation; (4) emergence of a conflict between commodity and property right of information; (5) new technology doesn't replace libraries but add to their dependence on networks.

---- (1987c):

Berry asks the question, "why does dr. Boorstin bash librarians to support literacy?" The probable answer may include Boorstin's reaction to the librarians demand that the Library of Congress should be lead by professional librarian and partly because of his view on new technology impact on illiteracy in USA. According to Boorstin, librarians embraced new technology because it adds to their professional status, freeing library science from its stereotype of 'the gentle Samaritan.' Berry objects to this condescending view.

BERTHOLD, ARTHUR, 1933:

Berthold stresses the importance of professional philosophy of librarianship which would include definition of aims, formulation of relationships with other disciplines and creation of scientific basis for library theory.

BESTERMAN, T., 1946:

Library technique must be based on understanding library purpose. The aim of book selection theory based on the effect of reading is a dangerous didactic philosophy of librarianship, since it will limits itself to the wants of readers, deliberately encouraged by libraries.

BEVIS, DOROTHY, 1963:

Demands for library services change with times and result in changing the content of library collection and methods of its processing, mirroring the needs of the society served. However, the principles of the library remain the same throughout the history of librarianship: to make ideas accessible, to provide "'windows' that set free our 'horizons.'" (p.47)

BIERBAUM, E. A., 1990.

The author suggests the 'Least Effort' concept as a unifying principle in library research and practice. This principle is based on the assumption that librarianship is the only profession that conjoins persons and their information seeking behavior.

The Principle of Least Effort was defined by George Zipf (1949) as "meaning that each individual will adopt a course of action that will involve the expenditure of the probably least average of his work." (p. 18)

This principle was applied in the field by others: (a) e.g., Mooers' Law that "'an information retrieval system will tend not to be used whenever it is more painful and troublesome for a customer to have information than for him not to have it"; (b) Cutter's notion of the convenience of the reader; or (c) Ranganathan's law 'save the time of the reader'.

The adoption of the principle of Least Effort requires a shift in library paradigm. (a) Matheson anticipated total restructuring of the field based on its processes. (b) Cochrane found that majority of searches are limited to topical subject search. (c) Newtonian deterministic description of human behavior follows the principle of Least Effort by introducing concepts such as quantum mechanics in science, or a holistic view of a person in psychology.

BIERI, JAMES 1971:

Cognitive structures, the relatively fixed patterns for experiencing the world, provide a sense of order, meaning, and structure in understanding the events around us. Stimulus for information transformation mediates any antecedent-consequent relation in behavior. This is a major difference between cognitive theories, emphasizing information processing and learning theories based on concept of habit in behavioral learning. Cognitive theorist defines the objective stimulus in terms of its subjective experience. The structure of transformation itself is the content of learning, and not just a series of responses determined by habits and drives. The cognitive processes include selection, organization, moderation, control of motives, and adaptation to constraints.

Among various theories:

(a) Psychoanalytical theories in learning propose that the ego structures, both primary and secondary, are inherited or given in a personality and represent the functions of sensation, perception and memory.

(b) The field theory emphasizes organism's cognitive representation of the psychological environment as a key mediational variable in behavior.(e.g., gestalt stresses the organized nature of perceptions).

(c) The schema theories are concerned with learning of 'schemata', organized models of ourselves which modify the impression produced by incoming sensory impulses. Schemata are constructive by elaborating on past experiences, and they contribute toward development of attitudes. Schemata are learned, constantly changing through progressive differentiation.

(d) Cognitive Personality theories are based on the concept of organized neural structures, reflecting different states of consciousness. 'Self' theories based on self concept of individual as an organizing factor have both cognitive and motivational properties, while personal construct theories maintain that behavior is channeled by cognitive structures organized within person's overall system.

Cognitive controls are the cognitive structures that modulate drives, by steering goal-oriented behavior into appropriate channel determined by a given situation. Individuals differentiate their environment by separating themselves from it.

Central is the ability of an individual to identify the behavior of others in the processing of information about the social world. Information theory may be used either as a method of analysis or as a structure itself.

BINWAL, C., 1992:

Social knowledge and information are synonymous concepts in Ranganathan's definition of subjects. Since the subjects constantly change, there is a need for continuous modification of their structure, affecting their relevance and functions in information retrieval.

BIRDSALL, WILLIAM F., 1982:

The desire for professional status resulted in failing to define the purposes of the profession itself. This lead to the present deprofessionalization of librarianship: "clients are more self-reliant, depending less on professionals whose occupational structure is based on the monopolization of a specific social service and the knowledge upon which it is based ... (suggesting) an emergence of a self-service society requiring a new kind of professional, professional that helps the client become more self-sufficient." (p.225) This requirement differs from that of a physician who uses his knowledge to help the client without however sharing that knowledge with him and requiring the client to return to the doctor for future assistance.

Birdsall suggests that librarians (1) must be sensitive to needs of a variety of clients; (2) assure full free access to knowledge, resisting censorship and monopolization of information by private sector; (3) advocate patron's self-sufficiency; (4) reject professional models that limits their role in society, and cooperate with other information agencies in providing services to clients.

---- 1985:

Public library services to both the community and individuals without reconciling the differences between them resulted in ambiguity and confusion. The problem is in assuming that the needs of these two constituencies are the same. The abstract notion that society's values transcend those of local community led to the concept of individual freedom, and library encouraging "an individualism fostered by national social and cultural norms at the expense of local values and relations." (p.23) Library's function is to bridge the two approaches by understanding the value system of both.

---- 1988:

In late 19th century library political affiliation was discouraged. The concept of neutrality was extended to early 20th century, although a Progressive Librarian Council and a Liberal Library League were formed during highly politicized 1930s. The controversy between the two approaches had little direct effect on the profession; library services remained least ideological.

In 1960 liberal librarians identified themselves as social, not political, activist. Others, focused on rational techniques based on knowledge sustained by scientific mode of inquiry, and continued to reinforce library apolitical stand.

Both American liberals and conservatives related to Mill's liberal philosophy. However different writers identified different kinds of liberalism. Idealists stressed liberty, privacy, and property, rights; realists focused on power, and law; while minimalists advocated tolerance, mediation and pluralism.

Both conservatists and liberals criticized the focus on individualism as weakening the sense of community. Conservatists argued for hierarchy, family and tradition, while liberals focused on collective action.

In librarianship most important philosophical premises are: (a) individualism, personal liberty, intellectual freedom; (b) self-fulfillment and intellectual growth, promotion of reading as means of self-improvement, and (c) free flow of ideas and the opposition to censorship with library embracing the concept of utility of information. -

Library is criticized by conservatists for liberal promotion of intellectual freedom, and for maintaining conservative middle class values by liberals. New ideologies such as Neo-Liberalism, Welfare Conservatism, feminism or environmentalists further impacted on library ideology.

The ethical options for librarians are either (a) to join 'high-tech liberals' of the information society, accepting the tenets of information as commodity, with librarians becoming a professional elite of information brokers marketing library services, or (b) continue to be conservators of community cultural heritage, maintaining 19th century's social goals formulated by elite segments of the society, to maintain a status quo, thus failing to define their professional purposes.

The alignment of ideals with pragmatic issues lead, to a confusion of objectives, creating a paradoxical tenets of political involvement in social activities and neutrality on political issues.

BISHOP, DAVID, 1976:

Tendency to uniformity by following cost-effective practices or by sharing similar core collections, create conceptual problems since each library attends to the needs of different clientele. In the past, libraries served only an elite, in Jeffersonian America services were extended to workingmen, today the gap between technical and general humanistic libraries continues to grow. The diversity is needed to serve particular clients more effectively, the unity is necessary by the interdependence of all agencies in advancing all learning. The provision of information should satisfy both the diversity of needs and unity of interrelated knowledge, by developing collections and services relevant to the library patrons at large and by individualized packaging of information for specific patrons.

BISHOP, WILLIAM WARNER, 1919:

In 1919 librarianship experienced a crises created by a conflict between quality and quantity of collections based on librarians knowledge of what is good service and what are the increased demands for services beyond librarians capacities. This created a danger of mediocre service by duplicating collections in branches. and collecting 'trash' books. "The book-using art is bound to grow. and our failure or success in leading and directing its growth is going to be the measure of our ability to rise to our opportunities." (p.9)

BLACK. ALISTAIR 1991:

The modern concept of the 'public library' emerged from (a) the utilitarian attempt to replace the elitism of the 19th century by focusing on the welfare of many, and from (b) the idealistic believe in the values held by the whole society in supporting the free library.

Utilitarianism originated with Jereme Bentham and David Hume who focused on utility. John Stuart Mill expanded the notion of pleasure from the egoistic pleasure-seeking to the notion of 'higher' pleasure for the whole society. requiring altruism and society's support of public library services.

Utilitarian empiricism stresses a posteriori acquisition of knowledge through experience. and idealists emphasizes an innate, a priori qualities, reflecting ethical distinctions between utilitarian teleological. beneficial end-results of library services and idealistic deontological moral absolutes in satisfying information needs through free access to books. The self-realization concept of idealism is based on a metaphysical meaning of perfection. Both philosophies advocate good citizenship. social harmony and equality of opportunities.

BLACK, WILLIAM K. and JOAN M. LEYSEN. 1994:

Librarians are considered academicians that participate in the educational goals of their institutions. by advancing learning and research through the provision of information services. The library scholarship consists of original and secondary research. evaluation of the scholarly works of others, development of creative activities (computer software and bibliographic instructions). and complementary research (exhibits. position papers, etc).

BLACKBURN, ROBERT, 1968:

College libraries are failure because of competing objectives of the teaching faculty and librarians: (a) teachers want to posses books. librarians own them. (b) teachers are jealous of librarians' knowledge of the publishing market and for selecting and ordering books: (c) Librarians access to the students is limited by teachers control of what they should read; (d) teachers are disorderly. librarians stress order, efficiency, economy and preciseness: (e) books in the library are threatening if they do not agree with the teachers' viewpoint: (f) different status of librarians and teachers is reflected in different working environment, salaries and status.

The solution is to bring the bookstore to the library, allowing teachers and students to order books for themselves (in addition to books in the library) from the copies displayed in the library. This approach would bring teachers, librarians and students together with the books and their content, allowing librarians to buy. lend. reproduce and facilitate personal purchases of books. avoiding personality conflicts and encouraging 'love of books.'

BLAKE, FAY M., 1971:

Major social responsibilities of academic librarianship include an understanding the process of scholarship. how and what people want to learn, and how to discriminate between different scholarly works. Librarians must become politicians by utilizing campus power, and by having direct contact with the library constituency. Most important however, is the understanding that library exists to facilitate communication between people through books.

BLAKE, FAY M.. and E.L. PERLMUTTER, 1977:

The function of librarians as information handlers is based on one to one relationship between librarians and library users. This function does not lend itself to mechanization or improved productivity.

Business cost-recovery philosophy contradicts libraries' free service philosophy. The online service may reduce the disparity between 'have-and-have not" access to information. but the fee-for all services will increase that disparity in terms of economic ability to pay for the access to information.

"If we do not guard against imbalance . . . [between the two approaches], we shall be faced with the paradox: the wealthier our nation becomes, the more impoverished will be our free public service." (p. 2008)

BLAKE, M.L., 1985:

There is a need for a policy on information that reflects the new information age. We are witnessing a converse of Darvinian evolution: a "cultural evolution in space through competition for time." (p.125) In it, fitness depends on information technology. It is reflected in the brain evolution into two spheres: space processing right sphere and time processing, left sphere.

Librarianship is space-focused (e.g., classification is based on holistic pattern recognition in time-fixed knowledge), while information science is time-dominated (e.g., time shared on-line access to time changing information).

Taxation as the social control of the use of space has a long history, but the taxation of the use of time, available to the information-reach only, is less taxed.

BLANKE, H.T., 1989:

Contemporary social scientists view themselves as 'value-free' professionals; librarians embraced this political neutrality to enhance their professional status, at the risk of being dominated by other political and economic powers.

The profession must define its values in political terms, by cultivating the sense of social responsibility to provide free and equal access to information.

Today, corporate capitalism, responding to the erosion of its global power, endorses libraries' preoccupation with technology: the patron becomes the client and the librarian information broker. Innovation and efficiency in processing information become a marketable commodity, overriding the importance of equity of public service. Overall strategy is to encourage private enterprises to 'add value' to government information, i.e., to repackage it for profit. Concept of value-neutrality creates a vacuum that can be filled by prevailing political and economic ethos, endangering the fundamental ideals of free and equal access to information.

"Without a clear and vital set of philosophical and political ideals acting as a guiding beacon, the library profession will not remain neutral, but will drift aimlessly with the currents of power and privilege." (p. 42)

BLASINGAME, RALPH and MARY JO LYNCH, 1976:

Traditional librarians' responsibility is to acquire, organize and provide access to collections of documents relevant to patron needs. The responsibility for providing other resources is considered secondary and has low managerial priority. If that responsibility is limited to the provision of access to the total available store of information only, the distinctions between the 'own' and 'other' resources disappear, implying an important change in the philosophy and values of librarianship.

BLISS HENRY EVELYN:

Bliss called for special social and educational philosophy of librarianship, studied by scientific method and consistent with ethical motives (P. Peirce, 1951). He is criticized by A. Broadfield for not believing in an individual, for endorsing sociological theories of group personality, and social righteousness and for confusing natural order of science with order of natural science. (A. Broadfield, 1949)

---- 1935:

The author interpreted Danton's call for philosophy of librarianship as relating to special philosophies such as philosophy of education, of sociology, of science or psychology.

Librarianship lacks satisfactory definitions of valid principles of belief, purpose, method, and conduct concerning knowledge, science, philosophy and ethics; but -it provides generalized 'verified conclusions, validified by a consensus, not mere conjectures, nor bald traditions.' (p.234)

BOARDMAN, EDNA M., 1988:

The author stresses the importance of knowing how and to whom librarians promote themselves. The school library is integral to the school if it provides material necessary for teaching; but if it makes available just a leisure reading or occasional facts, its services are supplementary to school's curriculum. The author advocates a strategy of positioning, 'thinking in reverse'. by focusing not on what librarians think they are, but how their role is perceived by others. "If we can address the real concerns of our public; if we can establish our services as integral parts of secondary education; if we can improve our position in the public eye; then the resulting improvement in public support will ensure that we flourish." (p.17)

BOAZ, MARTHA, 1972:

Librarians are not only catalogers, reference librarians or bibliographers, but primarily humanists and people-oriented communicators knowing the contents of their book. Library education should be more concerned about ideas and communication than about facts and contents.

BOHNERT, LEA M., 1974:

Fairthorne's theory of notification clarifies the foundations of information science. He defined 'notification' as 'mention and delivery of recorded messages to users', listing as the main elements of library operations: (1) Source (e.g., authors), (2) Code (e.g., language of a book), (3) Message (the signal), (4) Channel (e.g., microfilms), (5) Destination (e.g., reader) and (6) Designation (subject description).

The first five concepts describe Shannon's theory of communication, the sixth, 'Designation', adds meaning to the communication in library theory. The elements grouped in triads describe twenty major library activities. Triadic arrangement describes relationships between the two elements and their impact on the third element.

Shannon's Code-message-channel triad is a 'black box' of signaling (e.g., printing), while source-designation-destination is the librarian 'black box' of discourse. that is, librarians are not concerned with the subject of discourse as such but with the reasons for which it is requested by patrons.

---- 1989:

The author maintains that both library and information science are the same disciplines. Library science and its classification and subject headings are the foundations of information science. and the name 'information retrieval' is a better description of the nature of information science.

BOLGIANO, CHRISTINA. 1982:

Major function of the didactic art is to relate people to their environment within a context of a systems hierarchy of values; it is a shift from the object-oriented to systems oriented culture. "Here change emanates not from things, but from the way things are done." (p.289) Systems science is becoming an interdisciplinary field of knowledge in a unified theory of universal processes. "It is fundamental to the philosophy of systems that the never-ending spirals of systems interactions be recognized." (Ibid).

Among the characteristics of the systems are: (a) synergy (the whole is greater than the sum of its parts) coordinates different functions in libraries, (b) systems have a life of their own, adjusting to the changing environment, such as the development of internal procedures within each library operation (c) systems analysis, define activities in terms of all influencing factors, often changing traditional patterns of library management, (d) integration of functions that reduce duplication of library processes, and (e) networking, organizing individual systems into a supersystem, such as OCLC.

As a system, library is a complex of relations between people and information processes, within a larger social, economic and political systems.

Systems are not synonyms for computers; in librarianship they are communication system of ideas interrelated with an operational system using computers in its physical processes.

In the systems approach information is essential: it is communicated by libraries, which "as the medium for organization and transfer of information are society's work of art." (p.291)

BOLL, JOHN J., 1972:

Library education reflected five major approaches to the core courses, based on the following theories: (1) 'The one profession in one year': the focus is on the unity of the profession at the expense of specialization within it. (2) 'Maximum flexibility in one year': the approach minimizes the importance of core course. (3) The 'changed emphasis': replaces some core courses by specialization. (4) The 'growing single profession': expands the length of study. (5) The 'structured or several subprofessions': focuses on specialization with core courses developed for each subdiscipline.

The present core contains only few philosophical concepts. "Curriculum revision must begin with a statement that forms the philosophy and rationale for change." (p.197)

The author notes that the similarities between different library subdivisions are philosophical and conceptual, while the differences between them are practical. Librarianship might be considered for practical and philosophical reasons "a cluster of four or five interlocking subprofessions." (p.209)

BONK, W.J., 1956:

The public library as a social institution has its purposes determined by the society. However society itself is not a static institution, hence the statements of library purposes formulated in the past may not be relevant today.

In democracy individual thoughts and minority opinions must be protected; in the equalitarian society the stress is on uniformity at the expense of individual freedom.

Since the book has a great impact on the mind of an individual, the librarian must choose between preservation and obliteration of independent thinking, thus considering the library as an active or passive institution.

BONN, GEORGE S., and SYLVIA FAIBISOFF, 1976:

Papers in this collection discuss major causes of change: the government, economic conditions, science and technology; and possible impact of change on three vital areas: humanities, education and social institutions.

Shera called for librarians to be not only the memory of the society, but also the communicators of knowledge by providing information to all its users (library elite). R.L. Carroll noted the growing interest in intuitive knowledge, in the manipulation of words, symbols, and in the problems of value. J. McDonald predicted "a major shift in the needs of universities, a deemphasis of doctoral programs, and a shift toward in-service training . . . [with] information viewed as a national resource."
H. Lopata examined social change for social institutions "noting the evolution from a relatively stable, urban and industrial world to a postindustrial middle-class society exhibiting growing duress and the breakup of the family unit." Shields indicated a need for librarianship to be reduced to humanism: "to say that libraries are solely institutions of education or recreation is to misapply what society asks of librarians." D. Ely maintained that both individuals and institutions should participate in change "in helping to create the future rather than to be shaped by it." (pp.vii-x)

BOON, J.A., 1991:

The General Systems of Bertalanffy is a scientific approach that varies from the atomistic and mechanistic views of science by examining reality as a whole, not each of its aspects separately. The approach influenced library management and organization of knowledge.

BOORSTIN, DANIEL J., 1980:

Equating library services with information services may imply that knowledge is equated with information. However, knowledge is orderly and cumulative, while information is random and miscellaneous. In terms of Gresham's law, information drives knowledge out of circulation, displacing the established, cumulative knowledge by recent, most problematic. "The latest information on anything and everything is collected, diffused, received, stored, and retrieved before anyone can discover whether the facts have meaning." (p.3) Libraries have two paradoxical and conflicting roles, as repositories of information, and as a refuge from information and misinformation. Information is provided to us as a service, but we must also be able to acquire knowledge for ourselves. "We expect to be entertained, and also to be informed. But we cannot be knowledged!." (p. 6)

---- 1982a:

The book endures, information becomes obsolete; books are cumulative, adding new knowledge to old, while new information displaces old; the book has the focus, information is about everything; books build tradition, information makes us "well-informed, but woefully ignorant." (p. 56)

---- 1982b:

Reading is not a skill but an experience, a part of the whole American experience. Three knowledge related biases are: (1) 'The bias of presentism', the learning is based on immediacy; by the time something is printed it is already obsolete or false. (2) 'The bias of publicity', private communications are often publicized. (3) 'The bias of statistics', we know the quantity but not the quality of reading. The library is 'a symbol of the privacy essential to a free people." (p. 11) Reading provides a refuge from all these biases by allowing readers to be at home with themselves.

BORDEN, ARNOLD K., 1931:

Usually philosophy follows discovery of facts, evaluating their meaning, significance and value. It interprets various relations within the whole experience.

Librarianship as a science must examine experimentally discovered facts, and as an educational institution it must address philosophical reasons for performing that function.

The main role of the library is to conserve and interpret knowledge. The relationship between these two roles is often confused because of a lack of philosophical understanding of bibliographic resources. The development of research in librarianship makes a philosophy indispensable in asking pertinent questions. "The mere doing of the research may yield something in the way of training and technique, but the conclusions will sound hollow without a philosophy to back them up." (p.176)

BORKO, HAROLD, 1968:

Information science "investigates the properties and behavior of information, the forces governing the flow of information, and the means of processing information for optimum accessibility and usability." (p.3) It is concerned with the "organization, storage, retrieval, interpretation, transmission, transformation, and utilization of information . . . (and its) representations in both natural and artificial systems, the use of codes for efficient message transmission, and the study of information processing devices and techniques such as computers and their programming systems." (Ibid.)

Librarianship is responsible for storing and disseminating knowledge, and documentation is concerned with storing and retrieving recorded documentary information; both are considered applied branches of information science.

---- 1984:

Library information sciences is defined as "a single unified discipline dealing with the management of information resources for the purpose of maximizing the utility of recorded records for the benefit of individuals, organizations, and for society at large." (p.185)

The education for librarianship should focus on philosophy, theory and principles relevant to the field as a whole and be responsive to the cultural, social and educational changes. The unified library information science can be advanced by integrating in the curriculum the concepts of information science, use of computers and telecommunication systems.

BOSTWICK, A.E., 1907:

Bostwick considers books as a basis for librarianship. They are transmitters of knowledge, the librarian is their agent encouraging reading. The purposeful reading in an esthetic and ethical environment enriches inner life of the reader.

This idealistic view considers the book as an object of affection because it contains both facts and ideas. Its content (the soul) expresses a universal mind of humanity, while its material aspects (paper, ink, etc.) express the body of the book. The true lover loves the soul with proper attention given to its body. However, this love is not synonymous with the love of knowledge (knowledge may not be recorded, or recorded in other media): it is a love of ideas, and of the way they are recorded.

BOTHA, WILLEN M., 1989:

The author discusses Shera's social epistemology and P.C. Coetzee's culturology of readership. Both demonstrate the existence of some basic concepts in library and information science that survived recent changes by emphasizing the value of information in librarianship.

BOWKER, RICHARD R., 1989:

The functions of the 19th century librarians were organizing, indexing and thought-saving the records of the culture: the librarians of the 20th century are liberators of books more than their keepers. Bowker felt that the librarian's mission to maintain close relation with his readers was one of the major 19th century library contributions to the next generation.

BOYCE, BERT R., and DONALD H. KRAFT, 1985:

The authors define a principle as a "single fundamental law, generally an empirical regularity based on continued observation" and maintain that the function of a theory is "to incorporate a body of such principles and to suggest new principles." (p.154)

The principles of information theory are based on Shannon model of communication. The principles of indexing as representation for retrieval are prescriptions not descriptions of indexing. Models of information retrieval are not principles or theories explaining retrieval processes, but representations of relations between queries for information and available records in databases. Bibliometrics provides quantitative descriptions of written documentations.

The authors conclude that information science "has been more concerned with facilitation of communication processes than with their explanation." (p.165) They are not aware of any "theory in information science that suggests a testable phenomenon whose successful observation would add to its credence." (p.Ibid.)

BOYCE, BERT R., 1994:

"Library and information science is the study of how people behave in the context of media for exchange of information, just as economics is the study of how people behave in the context of media for exchange of goods and services. If people care about what is being exchanged then the medium of exchange, and what happens in a society when it is utilized, becomes a legitimate subject for study in the social sciences." (p.257)

"The social purpose of the economy is the creation of goods, services, and jobs . . . the purpose of information is the creation of knowledge and ideas." (Ibid.) This calls for emphasis in educational curricula on the subject matter of library discipline, not on the techniques currently used, it is not being accomplished in many library schools, and is overlooked by profession. "It is library education, not the library, nor the need for the librarian, that is dying." (p.258)

BRAHM, WALTER, 1964:

Major problems of the public library are the population explosion, increase in variety of and need for knowledge. The problems are augmented by the philosophy of the localism, lacking coordination between individual regions. The argument, based on quick access to the collection becomes obsolete with network approach.

BRAMLEY, GERALD, 1969:

Approaches to library education reflected different philosophical positions of its leaders. Dewey confused librarianship as a vocation with than of a trade. Tedder identified librarianship with the profession. William F. Poole considered librarianship to be an art with preferred training in library practice.

Initially, the approach to library education was to minimize the concept of a library as a storehouse of knowledge, by focusing on the use of libraries, convenient classification of material and efficient cataloging. The attitude changed with the establishment of the Graduate Library School at the University of Chicago: it aimed at the research into the basic problems of librarianship, applying scientific methods of investigation. Librarians began to address fundamental principles of their profession.

BREIVIK, PATRICIA SEN and E. GORDON GEE, 1989:

The authors believe that the concept of information literacy will increase library participation in university instructional activities, by providing opportunities for self-directed, lifelong, active and integrated learning in the library environment. The library role will be extended by increasing the productivity of researchers, serving university patrons and administrative needs.

BRETZ, RUDDY, 1971:

Information is that which is perceived; in information system, information is the content of a message; a datum is a statement. Information to become knowledge must be sensed, perceived, comprehended and integrated into the existing structure of a person; it must relate to the individual's store of patterns and structures.

Knowledge is something stored in the brain; it is the content of human memory organized for retrieval. Instruction is a process of dishing out information, not a thing existing in space or time but a process. Instructional systems are designed for achieving learning.

BREWER, J.G., 1970:

Library history is closely related to the geography, since both refer to the environment. "the substance of history is the activity of men whose actions, although not determined by their surroundings, are necessarily related to the conditions in which they live." (p.255)

Comparative librarianship is essentially a geographical study of library specific environment, incorporating unique natural and cultural aspects that influence philosophy of librarianship.

BRIER, SØREN, 1991:

This paper presents a non-reductionistic and interdisciplinary interpretation of information science, based on (a) the new cybernetics that interprets information as a "system communicated through signs with a meaning content based on social practice" (p.97); (b) Peirce's semiotics "where signs are seen as a triadic relation between an object, a representer and an interpretant"; (ibid.) and (c) Hubert and Stuart Dreyfus approach that limits the rule-driven control of behavior to the early stage of person's development. Librarians analyze the user's requests for information by comparing their questions with earlier experiences, which provide the clues for the actual patron's needs.

"The major problem in information and library science is therefore not to find 'the laws of information', but to make theoretical knowledge from very different areas of research interact with practical experience in a fruitful and practical way in relation to some well-defined goals." (p.107)

BRIGGS, ALLEN F., 1959:

Significant in the concept of librarianship is an understanding of librarian's obligations: like Cerberus, he is a keeper of things nobody wants, or like Hebe he is anxious to share the collection with everybody. The most important function of librarianship is the storing and use of knowledge; librarians either know, or know were to find out what they do not know. "Children must be taught the escape which can be found in books:

if they are not, they cannot keep any kind of intellectual freedom of choice, but will simply become captive slaves of the whims of the propaganda merchants." (p.41)

BRILLOUIN, LEON, 1962:

Information is a function of the ratio of the number of possible answers before and after it is obtained. We choose a logarithmic law in order to insure additivity of the information contained in independent situations. (p. x)

This approach applies to a variety of information related problems in coding, telecommunication, computers, and others, by processing or transmitting information. However, this method cannot be used in interpreting human values of information. Hence, the definition of information is value-neutral, objective, and independent of the observer.

Technical issues are always the same: an accurate and correct transfer of information. The similarity with the physicist is in the relation of information to entropy as its opposite, i.e., information is negentropy, while entropy is a measure of the lack of information. Both must be considered together by comparing "the loss of negentropy (increase of entropy) with the amount of information obtained." (p. xii)

BRISCOE, PETER and others, 1986:

The first known library in Ashurbanipal (7th century B.C.) performed the same basic functions that are performed by libraries today: it collected, cataloged, conserved, provided reference and circulated books.

Three environmental trends may impact on today's libraries: (1) growth of an information industry, which becomes a potential competitor to the universities and libraries by repacking its services as information products: 2) proliferation of computer terminals will encourage users to bypass the library; and (3) shift in publishing to electronic media will impact on the management of libraries. The library of the future will be a broker of information.

Information and knowledge are a part of a continuum, or the beginning and end of a process, and although knowledge subsumes information, the converse is not true.

BROADFIELD, A., 1946:

The book discusses the role of classification in the philosophy of librarianship with a focus on the preservation of individual characteristics in classifying concepts.

The study of classification involves logic (a set of rules, not values) and psychology (the perception of likeness). The objective of classification is to identify differences and similarities between individuals without compromising the individualities of each. Basic is the relationship between things. The apprehension of likeness is merely a pointer to possible interrelations between concepts..

The relations include:_(1) similarities (implication of interchangability), (2) comprehension of relations between concepts, (3) relationships are studied not so much of the resemblance, but of the characteristics they reflect, (4) resemblance is an identity in difference ('unlike' is what's left after all 'likes' are identified).

Logical division is based on the genus-species relations in a logical, not biological or temporal sense of the term. Logical order is a unity of necessarily related concepts. The correlation between this and any other order is similar to a mathematical association, and is not subject to empirical observations. Classification involves differentiating between qualities; its aim is not to arrange things one after another, but to state how they are interrelated. It is concerned not with individuals of a kind, but with the kinds of individuals, and with kinds of things, not their materiality.

The consensus is an agreement, unanimity; the classification is a system of expressed judgments, or agreements, therefore it must be critical.

In classification distinction is made between (a) class concept (e.g., a man), (b) concept of things included in the class (e.g., a concept of a man), and (c) object denoted by the class (the men themselves).

---- 1949

This is an argument in favor of individual; the primary role of the library is to provide the individual patrons with needed recorded material, from which they can choose what they need. Any attempt to influence the individual is wrong.

Philosophy is a very personal matter, it cannot be made to order. Philosophy of librarianship cannot be confused with a narrow field and must be distinguished from ideology, which may be determined by librarians' own inclination and preference.

The same philosophy is not desirable or possible for all librarians, but each should have its own. Major attributes of such philosophy are: (a) freedom of thought (from the government or group tyranny) (b) its function is to inform patrons about available records, but not to service them (patron should not be dependable on librarians' services), (c) each patron is a unique individual, (d) social goods are means not ends in themselves, (library is learning not a social institution), (e) librarianship should support no one ideology, (f) efficiency is a function not a criterion for making choices and (g) librarian is to serve all by serving each individual's unique needs.

The relationships between science, philosophy and librarianship are illustrated below.

| SCIENCE | PHILOSOPHY | LIBRARY |
|---|---|---|
| Inventory of records | Overview & balance | art & science |
| Determinism | Rigid classification | Scientific management |
| Uniformity | Diversity of individuals | Free access |

Science is in search of questions to be asked, librarianship searches for the recorded answers to these questions.

Tolerance is defined as an absence of specific belief other than belief in people's right to pursue their own goals. It is limited by fear of intellectual failure, insecurity and ignorance. Ideas preached should be also practiced, opinions should be distributed not propagated; toleration of ideas does not mean practicing them. Impartiality is a state of mind (active neutrality), an absence of a judgement.

Individual should be the end of all cooperation; cooperation should be in a form of collaboration (authority by consensus). Common good is common only if it is good for every individual in a group ('good for all' = 'good to each separately'). Rights of borrowers should equal those of the lenders.

Specialization is determined by the extend of relationships between concepts (universals) and their particulars. The purpose of specialization is to discover the particulars and to understand relations between them. Since total knowledge will never be known, specialization is good for limited, specific purposes only. The librarian is responsible for total knowledge, the bibliography is only his tool. A. Comte developed an authoritarian dogma and hierarchy, confusing knowledge with what it is of, because hierarchy in science doesn't equal that in nature; any classification is justified only for the special purpose. .

BRODERICK, DOROTHY M., 1963:

This is a discussion of 'shaky' concepts that: (a) book selection is an orderly process; (b) freedom to read implies unlimited freedom; (c) the public library is responsible for providing material on all sides of a given question; and that (d) library is exclusively responsible to the community that founded it. The library is not a status quo institution, it must lead by recognizing new ideas.

---- 1967:

The primary responsibility of library today is to other agencies of society, and only secondarily to the individual patron. The first of these responsibilities is the integration of knowledge, the second, the unification of culture.

BROOKES, B.C., 1973:

Shera's concept of 'macrobibliography' or 'social epistemology' provides a bridge between library and information science. Macro-approach means exploring the role of bibliography in communication processes, and emergence of specific functions of and needs for bibliography and coordination between them.

In the theory of graphic communication a distinction is made between communication as the end (best fitting the objectives) and as an instrumentality (its nature).

In social epistemology (understanding of the whole society's physical, psychological and intellectual environment) bibliography is substituted for graphic communication and intellectual products for ideas or cognitive elements.

Bibliographic studies consist of situational analysis (essential information) and analysis of the information unit (of micro and macro elements in information).

Shera's theory was reinforced by (a) Goffman's epidemiological theory of similarity between the dissemination of knowledge and the spread of infectious disease and (b) Bradford's law of scatter that (1) relates sources to the number of items they produce, (2) predicts number of items in a relevant bibliography; and (3) identifies obsolescence of information in terms of exponential law of decay.

---- 1974:

Fairthorne is considered as one of the founders of information science who defined the scope, clarified the terminology and defined basic principles of the discipline.

Information has its own laws; physical information is abundant and hence it calls for selection; it also requires minimum energy for its transmission between human minds; it is the cheapest commodity.

Information extends man's knowledge by storing and processing devices such as computer and telecommunication system. In an open system information is constantly drawn from the environment into new structures of orderly knowledge (negative entropy). A dead organism becomes a closed system (entropy).

Man acquires subjective and creates objective knowledge by absorbing information cognitively in terms of its relation to the knowledge acquired in the past. Information starts as a genetic and biochemical process, becoming sensory and finally cognitive process. The smallest units of information are called 'intelligibles' by Popper, 'intellectual products' by Shera, and 'cognitive elements' by Brookes.

The author notes a remarkable convergence of Shera's social epistemology. J.Z. Young's description of the biological role of exosomatic brain. and Popper's concept of objective knowledge without a knowing subject. Together they point to a new field of knowledge, information science.

---- 1980a:

Information pervades all human activities, blending objective and subjective aspects of reality. It relates to mind/body dualism of physical and mental worlds.

Plato was a dualist distinguishing between mental and physical phenomena, monists recognized one reality only: Berkeley's mental. or T.H. Huxley's material. Popper conceived it as three worlds. W1: physical (explored by natural scientist and technologists): W2: subjective human knowledge (studied by social scientists and humanists) and W3: man-made objective, recorded product of human knowledge (records of the other two worlds).

In librarianship and information science records of practical world are collected and organized in W3. and the theoretical task is to describe and explain the interaction between W2 and W3. leading to the organization of recorded knowledge. The records become independent of the knowing subject; they are objective. accessible and proper subject for the study of knowledge (Popper's epistemology without a knowing subject). However. Popper ignored the concept of 'information' by confusing it with sense-data.

Brookes defines "knowledge as a structure of concepts linked by their relations and information as a small part of such structure." (p.131) In the theory of information. "the fundamental entities of World 1 are matter. energy and radiation; the fundamental entities of Worlds 2 and 3, as fundamental to those worlds as matter and energy are to World 1, are information and knowledge." (p. 132).

---- 1980b:

Frequency-rank statistics is a preferred method in the analyses of empirical information. Traditional use of classes do not include information related to the individuality of human responses. The frequency-rank distribution "yields one statistical law for the very rich. others for the rich. the average man. the poor and yet another for the very poor." (p.221)

Information space like the physical space requires adjustments for the subjective distortions. Important is the metaphysical approach to the issue of physical-mental realities. In psychology. the experimentalists adopt monist physicalists' attitude and their use of objective measuring instruments and quantitative techniques (W1). while psychoanalysts accept priority of a mental, subjective, cognitive reality (W2).

---- 1981:

This series of essays relates to two main issues: (1) separation of the physical and mental components of information phenomena, and (2) the role of Bradford's Law and ranking technique used in investigating information contained in raw data.

Librarians' physical problem is to assure easy access to the most often used material; information scientists' cognitive problem is to relate the problem of usage of library records to the changes in the relevant fields.

Brookes identifies four main elements in the changing paradigm related to information science: (1) the role of information science is to explore and organize Popper's objective world 3. (2) the approach is scientific by considering all data publicly observable, (3) information (fragmented knowledge) and knowledge (coherent structure of information) are extra-physical entities existing only in a cognitive space and (4) quantitative analysis is adapted for use in cognitive space, recognizing human individuality and value of empirical data.

---- 1982:

Brookes maintains that (a) Librarians don't organize knowledge but classify books; (b) the information - knowledge is a dynamic, continuous process; (c) information and knowledge are not physical entities; (d) subjective information processes are inaccessible, but objective process can be captured quantitatively; (e) creation of a mechanism that simulates mental processes ought to be supported metaphysically. (f) Only human endows various binary sequences in the computer with information, and only humans react to information, while nonhuman reactions are to physical effects, governed by physical laws: and (g) the practice of information science is highly subjective.

Bibliographic information retrieval merely maximizes the probability of recalling relevant documents, hence it is a subjective process.

---- 1984:

Popper argues that scientific truth depends on the evidence at the time, and therefore we can be certain only that some propositions are false. Alvey's 'Intelligent Knowledge Base System' is based on coherent (not necessarily true) syntheses of the logically incoherent files of data, simulating the subjective, mental processes.

BROOME, E.M., 1987:

The author criticizes Lowell Martin s proposal that in case of austerity, the library should return to basic services and to concentrate on libraries existing strengths. This view is based on an assumption that patron's aspiration will always outstrip available resources, and that library should adopt H.S. White concept of 'ingratiated irreplaceability', i.e., considered itself indispensable to the public.

Broome maintains that this approach motivated by self-interest of librarians should be replaced by a broader public library mission to provide opportunities for self-education, developing new services, free access, and to encourage serendipity of the search by patrons rather than to provide demand-led services. "Libraries have no single aim: their purposes are multifarious." (p. 563)

BROWN, H.G., 1940:

Brown disagrees with MacLeish's call for librarians support of democracy, considering it an uncritical endorsement of a political system. He also opposes the concept of librarian-teacher as too limited, since the intellectual inquiry cannot be limited by political, religious or any other beliefs.

BROWN, JOHN SEELY, 1986:

Access to and manipulation of information must move beyond rigid software system to manage the content rather than the form of information, and to explain how to retrieve the meaning of information (a function similar to human process of reading a text).

We need a better theoretical understanding of how to construct transparent expansible systems . . . These issues include such broad areas as what information/knowledge is, how its meaning emerges from its form, and what kind of architecture will enable us more readily to build systems that can extract and operate on information content." (p.16)

BROWN, ROYSTON, 1988:

The author lists six librarian's roles in providing information services, as: (1) an honest broker (it involves effective dialogue between public agencies), (2) a facilitator promoting inter-agency partnership, (3) a provider of core collections of service, (4) a guardian of the public good to provide the regulatory framework, (5) an educator offering adequate educational programs, and (6) as an arbiter for the disadvantaged patrons by discriminating in their favor.

BROWNE, MAIREAD, 1986:

The major functions of information professional include: identification of needs, design of a search, retrieval, evaluation, analysis, synthesis, packaging, repackaging, and dissemination of information, and design and provision of information services.

A core course for training information professionals is based on the principles of information practice, grounded in a 'marketing philosophy' of delivering information services. Major areas of study include: (a) significant literature, (b) basic understanding of the organization, structure, major principles, concepts, methods and reasons for the discipline; (c) nature and development of the principle problem-solving techniques and their application.

The concepts and theories of the social science and humanities applicable to the study of information science were reduced to three specific subdisciplines: psychology, communication and sociology of work and organizations.

The six-unit curricular sequences include: (1) foundation for the study of the theory of information science (basic concepts, information transfer, information resource life-cycle), (2) theories about retrieval of specific information, (3) concepts about information user behavior, (4) theoretical underpinning of information retrieval, (5) design of information products (services), and (6) review of all previous theories in the context of the information science per se, focusing on the concept of knowledge

The author cautions that "while there is a core of knowledge and skills relevant to information practitioners this core is not synonymous with the core of librarianship." (p.317)

BRYANT, DOUGLAS W., 1975:

This is an argument for resource sharing among research libraries, through interlibrary cooperation, compilations of bibliographic information and uses of microforms and computers. In addition each library is responsible for direct support of their own scholars and academic programs by acquiring unique materials relevant to their research.

BRYSON, LYMAN, 1937:

The goal of adult education is to provide library materials for individuals requiring knowledge related to their personal or societal needs. The library has the ability to serve both individuals and groups, as "a custodian of all that is not immediate and accessible within the narrow range of each man's personal experience." (p.12)

BRYSON, RONALD, 1970:

"This study constitutes a search for a theoretical framework for the field of librarianship . . . needed in order to define the boundaries of the field, to demonstrate its unity, and to describe the relations between its internal elements, as well as the relations between librarianship and the parent-institutions which develop libraries." (p.1)

Relying on A. Kaplan's philosophy (1964), the author proposes a three-dimensional theory of librarianship based on three sociological laws of: (1) communication-needs expressed by 'information-needs' dimension; (2) organization-development expressed by 'library function' dimension, and (3) division of labor expressed by individual functions dimension.

Each dimension is in turn subdivided into a series of subclasses, each with specific functions: (1) in 'information needs': teaching, learning, professionalism, awareness of events, recreation, research and management of organization, (2) in 'library functions': information services, organization, production and acquisitions of materials, and professional activities, (3) in 'individual functions': technical routines, information processing and administration. The theory is validated by assuming that the subclasses in fact represent the activities in librarianship.

It is an interpretive model which according to Bryson satisfies the purposes for which libraries were developed as organizations.

Bryson distinguishes between: experimental and theoretical laws, identifying two approaches to theory: (1) as a map of reality (realistic view of finding principles in reality) and (2) as instrumental (theory is merely a tool of inquiry used as a guide to a description of that reality).

Following Nagel (1961), Bryson lists three components of a theory: (1) an abstract calculus (a logical skeleton), (2) a set of rules (assigning empirical content to the abstract calculus) and (3) a model (an interpretation of the abstract calculus). Together they form a theory.

In general the theory will systematize thinking, interpret, criticize and unify the laws and guide future observations and theorizing. By searching literature Bryson hopes to refine the conceptualization and to obtain a consensus of understanding.

The author identifies four elements in the theory of librarianship: library, bibliographic universe, service, and community, i.e., the library transmits information in a bibliographical universe to a particular community. In traditional librarianship, the principles were developed in academic style, while in information science these principles are developed in a symbolic style, establishing experimental laws based on observations.

Bryson stresses that librarianship is a social activity, providing communicative channels for individuals in need of information. He considers his theory as 'constructive' (utilizing a simple formal scheme), and 'field' theory (stressing relations between elements, not their attributes).

BUCKLAND, MICHAEL, 1982:

The concept of library goodness is weakened by a lack of coherence. Orr pointed out to two ambiguities that do not necessarily complement each other: the quality (capability) and value (beneficial effect) of library services. Both are difficult to measure. He also added to this distinction the goodness of library management.

Three paradoxes illustrate the problem: (1) evaluation of library material should be of its utility rather than its 'aboutness'. In a narrow sense it is a matter of quality and capability, in a long sense it is its utility. (2) Optimal library size is seldom discussed, although there is a marginal benefit in increased size of the collection, and (3) Lenin appreciated American public library, although he didn't share their goals of free access to information. This points to the dependence of beneficial effects on social determination.

---- 1986:

Licklider anticipated in 1966 the impact of computers on librarianship in a form of a procognitive system; known today as a smart system of information retrieval, related to the computer comprehension of semantic relations.

Changing focus in librarianship between 1880 and 1980 is viewed in terms of three categories: (1) Library values in selection and censorship depend more on the cultural than time factors. (2) Library technology continually improves with time. And (3) library science is interpreted as the understanding of the nature of gathering and retrieval of information, bibliographic control and the history of the profession; this approach will change only gradually. It is rooted in an obscure aspect of human behavior, and may be better understood with a help from cognitive psychology and artificial intelligence. "The interdisciplinary insight available from sociology, psychology, philosophy and linguistic . . . has been modest and more relevant to context and background than to central concerns." (p. 784)

Contemporary library and information services extend the concept of librarianship by including various information-retrieving activities. The discipline ought to become a field in itself by (a) focusing on the abstract representation of knowledge (e.g., analysis, description, storage, retrieval and use of information in the text), (b) stressing physical representation of knowledge (e.g., text-bearing objects, like a card catalog), and (c) developing centrality of information retrieval, since it includes major activities such as indexing, cataloging, classification, content analysis, description, storage and retrieval of information.

In library education the curriculum should include the study of (1) role of library and information in society, (2) information-gathering behavior, (3) theory and practice of information retrieval, and (4) managerial, political and technical aspects of library service.

"Paradoxically . . . the liberating power of the new information technologies will . . . induce renewed attention to

. . . traditional, non technological concerns of librarianship - so long as librarianship is a service profession, concerned with ideas as well as records." (p.787)

--- 1988:

In discussing philosophy of librarianship, the author distinguishes between preferred value-ladden philosophical definitions of the discipline (as a system of motivating beliefs, concepts, and principles), and more technical value-free definitions (as synonymous with the 'theory' of processes).

Philosophy of librarianship offers a guiding influence in determining library goals and in the allocation of resources (their cost-effectiveness). The library performs a distinctive social role in providing access to recorded knowledge, reflecting its social usefulness.

Philosophical bases of librarianship can be examined in terms of analysis of its management priorities and effectiveness of services (political and technical).

---- 1991:

Buckland's book focuses on (a) information as a process, (not as data processing but a process of informing the individual), as knowledge (that which is communicated to an individual) and as a thing (a means for importing the information) (b) a broadly defined information system; and (c) information retrieval.

The three reviews of the book (Buckland, 1992) reflect three different interpretations of librarianship.

Lancaster criticizes the book for its omissions of (a) Shannon's model and general systems theory, (b) of the concepts of disinformation and distortion of information and (c) for defining pertinence or topicality as a consensus of objective judgment. The book has many defects and is in Lancaster's words a 'somewhat tedious reading'.

Robert Hayes considers it an excellent book addressing relationships between information and human knowledge. In his focus on the three types of information, mentioned above, Buckland emphasizes the individual human aspects.

Daniel O.O'Connor sees in Buckland's book "a comprehensive and substantive philosophical base that encompasses both fields [librarianship and information science, identifying] . . . common concerns while allowing for the productive inquiry of important problems." (p.269) But he criticizes Buckland for confusing empirical generalizations with theoretical hypotheses, and for omitting the value of qualitative approach.

BUDD, JOHN, 1982:

Librarians are teachers providing both instruction and information. Their primary responsibility is to increase students' knowledge by presenting to them information in an orderly fashion. Teaching considered as an opposite to informing relates to a complex reference service. The difference between teachers and librarians is in the form not the substance.

BUNDY, MART LEE and PAUL Wasserman, 1968:

Interest in the professional status of librarians is based more on their self-interest than on their responsibilities. It is determined by three kinds of relationships. (1) Librarians are medium, rather than the client, oriented, and library patrons not the librarians determine what the want. (2) Librarians' goal to maximize client services is not always compatible with institutional concern about the overall good for the largest number of clients. (3) Librarianship lacks uniformity in formulating its philosophy and professional commitment.

With the possible exception of a librarian considered as a subject specialist, library practices do not meet professional norms and standard. "If librarianship does not move much more rapidly forward toward enhanced professionalism, the field will not only decline, but ultimately face obsolescence." (p. 25)

BUNDY, MARY LEE, 1969:

The primary responsibility of librarians is to their clients."The user has inalienable rights of information bearing on his intellectual, vocational, political and social life and the librarian must honor these rights above all other claims." (p.3)

The librarian should exercise independent judgment when assisting clients in solving their information problems. The extend of that service must be compatible with the librarian's own ethics. He serves as a mediator between the patron and the system, maintaining confidentiality limited only by law: and his services cannot be in conflict with privacy of other people.

The institution is required to provide librarians with resources needed to perform their job. The library should state clearly the priorities for its services, with emphases on those who need information most.

Librarians are also responsible for their own professional growth and have rights to engage in political activities without institutional restrain in promoting intellectual freedom and free access to information.

BUNGE, CHARLES A., 1984:

The concept of librarians' personal assistance to readers was introduced in 1876 by Samuel S. Green. The terminology changed to 'reference work' in 1891, calling for skillful extracting from the vague patron's request his real needs without being curious or impatient.

In 1920's the reference librarian was considered as an intermediary between the reader and the book, as a 'mind reader' of patrons needs (James I. Wyer). Margaret Hutchins advised librarians to put themselves in the patrons' place, listening carefully to their requests. In 1966 Ellis Mount pointed out to the 'invisible barrier' in the reference interview. In 1968 Robert S. Taylor placed the reference interview in the context of information-seeking human communication, focusing on negotiation and interpretation of patrons questions as reflections of their information needs.

The topic of the reference interview was widely discussed in 1970's, stressing nonverbal uses of communication and development of models borrowed from other fields. Brenda Dervin stressed the importance of interpreting information in terms of the inquirers' own perception of reality and their ways of seeking, evaluating and using information.

The overemphasis of nonverbal behavior and of counseling approach may result in these techniques more as ends in themselves, considering the librarian's role as that of a therapist.

The relationship between the reference librarian and the patron was redefined by Robert Merikangis and Brian Nelson as a partnership "working with the client as an equal partner and to share knowledge that will empower him or her to chose among the alternative solutions and to move away from a relationship of dependency on the professional." (p. 18)

---- 1992:

This is a review of the philosophies and goals of graduate curricula in American library schools. The term 'philosophy' is used as a synonym with 'contexts' of various documents that discuss the library educational programs.

BURKE, JOHN EMMETT, 1950:

The appreciation of beauty is a part of educational goals to cultivate modes of expression in communication, to enrich and to make life more enjoyable. "The philosophy of librarianship should combine scholarship, sympathetic understanding and respect for humanity." (p.279) The function of books is to enlighten, and the librarians should be curators of culture, by cultivating in himself and his patrons good taste for all forms of records.

BURKE, REDMOND A., 1947:

The essay expresses religious view in philosophy of librarianship: to develop world commonwealth and international mind, Christian democracy, scientific truth, and to combat prejudice and encourage Christian code of ethics.

It is a socio-political interpretation of democracy based on Christian theology combining scholarship, sympathetic understanding and respect of humanity.

"The librarian is never neutral on basic questions but is always impartial." (p.15). Neutrality implies no preference relating to basic requirements of the code of ethics.

---- 1953:

The objectives of this study were to review (a) the importance in culture of graphic communication and libraries, (b) the relation of communication media to their cultural background, (c) their significance, problems and development, and (d) the role of library and librarians in promoting culture.

The author followed two parallel lines of investigation: (1) evolution of graphic communication and libraries as cultural instruments (sociological function of a library) and (2) history of events shaping communication system (genealogy and biography of the discipline).

BURTON, MARGARET and MARION E. VOSBURGH. 1934:

In this classified and annotated guide to the library literature. the authors refer to some titles that may be considered historical predecessors of philosophy of librarianship.

Richard de Bury. (ca 1310) praised the book as a source of eternal truth. John Dury. (1650) describes the concept of a librarian as a bookkeeper. Jean Baptiste Cotton des Houssayes, (1780) discusses the duties of a librarian. stressing the service to the public. F. A., Elbert, (1820) was first to identify librarianship as an independent profession. E.G. Vogel (1843) gave an account of librarians duties in the Middle Ages. J.W. Dawson (1910) offered a theoretical discussion of relationships between librarianship and other educational institutions. P. Ladewig (1912) pointed out to the new popularity of librarianship and W.W. Bishop (1926) reviewed the whole field of librarianship in the context of the role of librarian as a scholar and book lover.

BUSCHMAN, JOHN, MARK ROSENZWEIG, and ELAINE HARGER. 1994:

The authors criticize the librarians who want to limit library involvements to social issues that are directly related to the missions of the individual library.

"Ours is a profession broadly concerned with literacy, intellectual freedom, equity of access to information, and the preservation and dissemination of cultural production. With such values, how can we turn a blind eye to issues of civil rights, human dignity, and the social and economic conditions in which human culture develops (or regresses) and remain a responsible profession? (p.576). The opposition to the library involvement in social issues is considered by the authors reactionary, hypocritical and intellectually unsound.

BUTLER, PIERCE:

Pierce Butler was a professor at Graduate Library School and a major contributor to the philosophy of librarianship. His views are here briefly summarized.

1. Major themes:

Librarianship is a study of the theory, history and bibliography of scholarship. It is committed to truth, justice and beauty reflected in scholarship, ethics and esthetics.

The intellectual content of librarianship consists of three distinct branches: (a) principles that must be scientifically handled, (b) processes and apparatus that require special understanding and skills for their operations, and (c) cultural motivations that can be apprehended only humanistically. (Butler, P., 1951, p.245).

Butler's philosophy reflects objective realism of empirical investigation of sociological, psychological and historical aspects of culture. It represents a shift of focus from the process to the function of the field.

Librarianship consists of (a) scientific scholarship with the humanistic outlook: scholarship is "the total intellectual content of culture." (Butler, P., 1944, p.7); (b) sociological study of learning by reading, where reading expresses social values, (c) psychological investigation of motivation to read as a way to satisfy needs, and (d) practical concern about the present clientele and its needs, assisting users in transferring knowledge from books to their minds.

As a unique and independent social agency, librarianship should focus on the determination of common denominators among different types of libraries, implementing the reading as central activity, and promoting scholarship.

2. Culturalism

Butler's philosophy of librarianship called 'culturalism', defined intellectual concept of librarianship in terms of scientific principles, their cultural motivation and technological applications: all are seen from the humanistic viewpoint.

"Culture is a pattern of behavior and conduct that has become standardized and traditional in a particular community and period" (Butler, P., 1944, p.6). It is defined (a) historically as a mode of life, (b) structurally as physical equipment, social organization and intellectual scholarship, and (c) practically as a way of coping with nature.

Culture consists of physical, social and intellectual components in dealing with nature. Cultural environment and library relations to the community and scholarship are essential components of library philosophy.

Culture is organically integrated, and the library is a reservoir of scholarship. Library scholarship is defined as a common sense integration and correlation of things already known to practicing librarian. Its functions are: (a) to collect scholarly material, (b) to share resources and (c) to provide bibliographic access to the collection. The scope of librarianship is historical, sociological and philosophical.

3. Comments on:

The Book:

Books are alive, independent of their author, original in comparison with all mechanical constructions that are based on patterns of nature. They express conscious mind in the print format, and hence affect readers' conduct by educating, amusing or motivating him. It should not only be preserved but also disseminated. The book exists in two realms: (a) in nature as a physical object, and (b) in culture as a system of ideas.

There are two main functions of a book: to express emotions and to record information. Similarly there are two purposes of reading: to extend emotional experiences of an individual and to acquire more information about reality. The purpose of a book is to express emotional experiences and to record information, both considered a transfer of culture.

On cataloging:

Cataloging must conform to bibliographical principles and the cataloger is a specialist in an applied psychology and sociology by classifying library material according to the anticipated use. The cataloging is a cooperative enterprise, based on principles of consistency and historicity.

On classification:

Classification is considered not as a pattern of relations between books and knowledge (Bliss, Dewey), but as a useful time saving device. It is a compromise relating the content of a book to the linear relationships between books in a collection.

On epistemology:

Epistemology consists of scientific theory and empirical methodology considered in the context of social values, psychological activities (reading) and historical archival responsibilities

On ethics:

In librarianship ethics aims at satisfaction of informational, inspirational and recreational needs of library patrons

On metaphysics:

Metaphysics focus not on knowledge for knowledge sake, but on facilitation of the use of knowledge

On Reference

The role of reference is to provide specific material as it relates to other books on the same subject and in relation to the patron's needs.

On Scholarship:

Scholarship is defined as the total intellectual content of a culture.

Dimensions of librarianship:

A. The psychological dimension:

Psychology describes activities of an individual (e.g.. reading) which are based on desire for information, a will to pursue it and an action to pursue that desire.

Books are social mechanisms for preserving racial memory, a library is a social apparatus for transferring that memory to the consciousness of individuals. Words are less important than ideas. Every man creates a whole world of emotional values as a counterpart of the objective cosmos.

Perception is needed to record something in mind; to retain it requires the creation of a concept. and to recall it is an act of volition animated by desire. Graphic record preserve information even if seldom used; the mind retains only what is frequently repeated.

Reading is a psychological activity; structurally it parallels sensual perception and reflex memory, which together contribute to the rise of intellectual concepts. Motives to read must be strong enough to overcome rival motives. Personal habits and social environment determine whether a psychological urge to read becomes action or is merely potential. The urge may be for information, esthetic appreciation or a direct pleasure as an escape from reality.

B. Scientific Dimension:

The scientific mode of thought is seldom generalized beyond the particular form of mechanistic phenomena, and it is not interested in metaphysical analyzes.

Truth is an absolute conformity between ideas and external reality. Hence all valid knowledge arises from data supplied by direct, qualitative observations. Validity of the method and functional significance is often more important than is the extend of the knowledge.

The experiment is a technique rather than a method, and its significance is in providing opportunities for more observations. Physical science is based on collection of data by observation, explained in terms of immediate causation, and evaluated by a process of integration.

Library methodology should adapt scientific collection of data, explanation of causal relations between them and the statistical randomness used to remove controls of determinism.

C. Sociological Dimension

Sociological approach focuses on the social quality of books. Social duty of an individual is to respect common good, his privilege is to have access to socially accumulated knowledge.

Meaning of words is determined by their social use rather than by logical definition. Learning by reading is an intellectual metabolism that must go on ceaselessly in a society, if the well-being of that society is to be maintained. Library selection of material must relate to the people served as the sole criterion of social efficiency.

D. The historical dimension:

Historically librarians are the archivists of the culture. Graphic records reflect intellectual environment, changing with times and dividing knowledge into factual (standards), esthetic (literature of knowledge) and scholarship (individual's intellectual experiences). Butler demonstrates strong contextual view based on scientific verification and rational analysis.

The medieval mind appealed to authority, the renaissance approach to sense of value, and the modern mind demand an objective realism. The pre-modern man conceived an idea of causality as an external compulsion: the cause radiated a force, and an external reaction to it. Cause was considered as sufficient in explaining the effect. The modern man sees causality in terms of identity internally transformed, requiring absolute equivalence between cause and effect. Premodern man lacked modern plastic minds: the only common element in the knowledge range was its logical process itself. Modern man developed an intellectual concept of organic unity of knowledge. Each age created a collection of graphic records reflecting its intellectual habits; every major change in the social ideals produced alteration in library collections.

Librarians reflect one of the following schools of historical thought: classic view stressing importance of the best books for the readers; evolutionary theory of literary history evaluating books in terms of their contribution to progress; and the view considering literature as a function of civilization by focusing on the intellectual state of the reader.

The individual works:

---- 1931:

Bliss was fundamentally an orthodox, and revolutionary but not a radical philosopher, while Melvin Dewey was a logician. Both started with the same premise and assumed a strict parallelism between knowledge and books, agreeing that any relationships within one field apply to the other.

However, "to discuss classification as an entity is to assume for the whole what is true for only specific parts . . . library classification is and can be no more than a mere empirical equilibrium of divergent forces obtained by compromise"; (p. 93) "to assume that, because of its usefulness it is a part of knowledge process itself, is to ignore completely its manifold and necessary inadequacies." (Ibid.)

The classification system may be of value to the beginning library patron as a point of departure, for the more advanced user bibliographical guides are more efficient ways of searching the collection.

---- 1933:

Butler expressed a social science viewpoint by considering librarian as an agent of society and library as a social institution. The intellectual concept of librarianship consists of scientific principles, technological applications and cultural motivations, all seen from the humanistic viewpoint. It opposes pragmatism because of its rationalization of library techniques, which is a futile, dangerous simplification.

Butler's approach to social research in librarianship was not new, but the scope of his commentaries posed three leading questions: (1) what is the library place in civilization? (2) How to bring into a single focus all diverse interests of the library? and (3) what are the standards of scholarship?

Philosophy of librarianship formulates objectives and responsibilities of librarians. Called by Butler 'culturalism' it is based on an understanding of the nature of scholarship and its function in a society. It encompasses the following elements: (a) the library stands in the total fabric of civilization, (b) bringing all diverse library interests into one focus, and (c) defining standards of scholarship. The philosophy is formulated in the context of the individual as a member of a society with library assisting him to achieve his own, private, not antisocial purposes.

Butler stressed the need to transfer the attention from process to function, to seek knowledge in phenomena rather than in particular occurrences, to study librarianship rather than single libraries. Library science can embrace only the rational side of the fundamental phenomenon of librarianship that is the transmission of the accumulated experience of society to its individual members through books.

Books are used as a process of 'learning by reading', resulting in obtaining knowledge. All books are records of authors' knowledge as perceived, thought or felt by them. The librarian is not concerned with literature as literature or with knowledge as knowledge. His primary interest is in the current use of graphic records in his own time and his own community.

A formal bibliography is as related to history of books as chronology is to history of any social activity: it is a bare simplified summary fact. The bibliography is important not so much for the process by which it is compiled, but for the function it serves in providing material to the reader.

---- 1942:

The author argues for the theory of librarianship that can be developed without sacrificing practical efficiency. He distinguishes two general purposes in the use of books: to express emotional experience or to record information. Education, research, communication and consultation are the basic methods for the transmission of knowledge, with specific function of reference providing information to the organized collection of books.

Intellectual process consists of using libraries rather than individual books, books provide informative content interrelated between different publications. There are four methods for the transmission of knowledge through education, research, social communication, and reference.

Butler concludes his essay by proposing five practical principles: (1) In a civilization books are used in several different cultural processes. (2) The subject content of a book does not determine or limits its functional uses. (3) Reference work is only one of the many activities that take place in the normal reference room. (4) Invention, or discovery of new knowledge is one of the three processes of civilization; the others are conservation and transmission of knowledge, and (5) objectivity is very important in reference work.

---- 1944:

This is an outline of an introductory course in the history of scholarship. The course consists of three parts: theory, history and bibliography. Typical issues include: common factors among different types of librarianship, reasons for different services offered by librarians; the position of library in total culture, and library standards.

Standards of librarianship include: reading as its central activity, and promotion of scholarship as its purpose. The library is an independent agent of scholarship performing unique functions of diversified and balanced collection of books. Its theories must be concerned with scholarship and its function in civilization, hence the working philosophy of librarianship may be called 'culturalism.'

Each culture has three elements by which it implements its standardized and traditional patterns of behavior and conduct: physical equipment, social organization and system of ideas.

Types of scholarship consist of: (a) empirical, based on demonstration, (b) oral, expressed in verbal texts, and (3) graphic scholarship recorded in writings.

The processes of scholarship may be: (a) analytical: alinear, single path thought process from sense organs to consciousness, from premise to conclusion, (b) synthetical, psychological manipulation of many factors, or logical production of common sense from variety of inferential processes, and (c) intellectual capacity for manifold awareness and inferences. Ideas are consolidated by generalizations, aggregations or pure abstractions.

The products of scholarship are: (a) the sciences (inductions from experiments, observations or generalizations), (b) technologies (engineering) (c) concrete humanities (specific places, persons, periods, events): and (d) abstract humanities (philosophy, metaphysics, theology).

The economics of scholarship addresses: (a) its products (fabrication and construction), (b) storage of scholarship (scientific and literary texts), (c) the distribution (education), (d) consumption and (e) agents of scholarship (distributive).

Standards of scholarship are subject to various fallacies: (1) of constants (monistic fallacy) identifying a variable with one of its particular values; (2) of convenience (operative fallacy) identifying a problem with its solution, (3) of process (mechanistic fallacy) identifying a thing with the activities that produce it, and (4) of origin (genetic fallacy) identifying a totality with its components, or an end product with its original.

---- 1945:

This is a review of the Handbuch der Bibliothekswissenschaft (1931-40), in which the whole intellectual content of modern librarianship is structured into a logical system.

Most of the contemporary professional literature is limited to technological writings, administrative discourses or the normative works about the adequacy and efficiency of the present library system.

The second type of literature deals with the historical empiricism, but very little was written about librarianship analyzed from the professional viewpoint. Such writings ought to include historical, sociological and philosophical studies.

"If librarianship ever achieves a philosophy worthy of the name, it must not only explain the book and the library in terms of man's nature and his status in the cosmos but also rationalize the librarian's ingrained loyalties to truth, justice, and beauty." (p.350)

---- 1951:

The philosophy of librarianship should formulate its objectives and appraise its responsibilities. The intellectual content of librarianship consists of scientific principles, technological understanding of processes and cultural motivation, apprehended humanistically. The cultural motivation is the promotion of wisdom in the individual and in the community.

Butler identified three phases in the development of modern librarianship characterized by: (1) interest in professional activities as a bookman vs. custodial (1850s); (2) closer attention paid to manipulative operations: a librarian becomes a technician in addition to a bookman (1870s); (3) emphasis on individual and community changing from description to explanation of library activities (1920s).

Presently (i.e., in 1940s) librarianship is seeking the philosophy of its discipline in order to attain self-consciousness and awareness of its cultural environment.

The modern approach ought to be based on the principle of scholarship's cultural functions rather than its processes, considered as an organic integration of scholarship, a physical equipment and a social organization. "Knowledge in itself is meaningless. Unless it is personally assimilated and its implications comprehended, it has no human value." (p.246)

---- 1952:

The culture is defined (a) historically as a mode of life, (b) structurally as a complex of physical (equipment), social (organization) and intellectual (scholarship) components, and (c) practically as means for dealing with nature.

Culture is uniquely human and consists of rational consciousness of an individual, his nature and values. Man can rearrange the content of his environment to produce things that without him could have no existence. He evaluates everything in cultural standards, combining material, social and intellectual values.

The intellectual development depends more on communication of ideas than on direct experiences. The library is 'a reservoir of scholarship' providing bibliographic controls of the collection of books, fulfilling the economic function of providing rare and expensive volumes to its patrons. Each library can be appraised by the quality of its scholarship, the utility of its service, and the magnitude of its operations, relevant to the needs of its community: "the library contributes not merely to the well-being of civilization but to its existence." (p.91)

---- 1953a:

Library scholarship must be based on systematic common sense, identifying, correlating and interpreting things already well known to the practicing librarian. The library is a source of information, recreation and inspiration to the individual reader.

Major library functions are: (1) scholarly, as a provider of needed information but also as a corrective to intellectual fragmentation imposed by specialization, (2) economic, by providing books to everybody independently of their cost, and (3) bibliographical by developing collections that are selected and organized in reference to their content and discipline.

"Any one who studied librarianship systematically must discover principles that prevail in every other reach of civilization. Accordingly a through-going philosophy of librarianship would be a philosophy of universal application." (p.9)

---- 1953b:

This is a sociological view of a book as an independent entity. Books are animated by the personality of the authors yet independent of them; all have their own non-biological life.

The book is original, has no prototype. It transcends the nature, (a) its meaning is assigned artificially and arbitrary to symbols, although the idea communicated by a book may be original; (b) reader thinking is in terms of words read in a book, and (c) subconscious uses of letters communicate things other than the author intended.

Books are the shortcuts to learning, because they are substitutes for experience, though and memory. The longevity of a book is necessary for the civilization.

Study of librarianship should include the knowledge of bibliographic history, production and forms of publication, legal, economic and intellectual aspects of book dissemination.

- C -

CADWELL, A.E., 1986:

Information society is characterized by a high percentage of budget spent on production and distribution of information (F. Machlup), and a shift from agriculture and manufacturing to information services (D. Bell).

The rate of change has no historical precedent, creating an information overload and difficulties in selecting needed information. The planned provision of information for everyone will also result in a loss of privacy, job elimination, social concentration of power and economic isolation between 'haves and haves-not'.

Information is considered as one of many goods determined by its perceived value. Basic need for information about daily living is provided free by libraries. The demand for information related to occupational, commercial educational and other profit enterprises will be determined by the skill and cost in using it.

CALDWELL, W., 1968:

The beginning of libraries was a historical accident. They were created and given raison d'etre by circumstances, which since then disappeared, leaving libraries without a sense of mission or direction. Unless related to social needs, definitions of library purpose are high sounding, verbosity, circumlocution and tautology; considering book supply as the library function confusing the concept of service with its purpose.

Following Malinowski's functionalism, the author discusses library purposes in terms of social functions, reflecting the basic social needs and the dynamic forces they generate.

The library purposes are defined in terms of the basic social needs of nutrition, reproduction, bodily comfort, safety, relaxation, movement and growth. Four major social systems address these needs. (1) Education system is based on dissemination of ideas and information; here the library is not only a source of information but also a teaching instrument. (2) Economic agencies produce wealth to meet many of the basic needs; library and information services are essential not only to economic institutions but also to organizations assisting economic agencies, such as government. (3) Communication systems depend on ready access to ideas and information provided by libraries. (4) Recreation system is nowadays monopolized by 'escape' services of television and mass media; a library may increase its contribution by also providing compensatory reading adjusted to the needs of individual patrons.

Important in all the above considerations is the understanding of patrons reading needs rather than presuming what they ought to read. "Only when we basically come to grips with the social forces underlying all we ought to be doing and relate all our activities to fulfilling the role which emerges will we be approaching a true state of professionalism." (p.225)

---- 1970:

Information science differs from librarianship, although it is derived from it. The subject matter of information science in addition to information technology includes: (1) subject analysis of information, (2) electronic data processing, (3) principles of management, (4) sociology of information work, and (5) subject bibliography. Related subjects are: semantics and syntactic analysis, logic and information theory, linguistics, language data processing, and artificial intelligence.

Librarians focus on interaction between people and ideas, communication of recorded knowledge, its origin, production, growth, organization, management and the users of knowledge, their needs and motivations. This in turn requires a study of theories of knowledge, their growth, perception, concept formation, personal acquisition of knowledge, and socio-political forces.

Understanding patrons' needs requires a study of psychology (personality theorization, socialization, learning theories) and social psychology (interpersonal relations, attitudes and changes).

The functions of information scientists are complementary to, but not competing with, librarians. They will use rather than manage libraries, concentrating on the provision of specialized information required by their organization.

CANFIELD, FRANCIS X., 1960:

Professional work of librarians is considered as a practical expression of justice, obedience and Christian charity. The relationships between librarian and patron are based on 'impersonal intimacy', "impersonal in a sense that objectivity prevails; emotionalism and personal prejudices are set aside in the interest of securing the fullest information possible, of attaining the objectives of truth beyond the personal whims of either librarian or patron." (p. 348)

CAPURRO, RAFAEL, 1985:

The author focuses on issues of production, storage, dissemination and use of specialized information through electronic devices, differentiating between ethical problems and elaboration of a professional code of ethics.

In research, ethics concentrates not only on information but also on its use; in teaching it avoids biased presentations; and in information it addresses abuse of facilities, confidentiality, bias, influence of brokers, vendors, and consideration of information as a social power.

Knowledge is not absolute, it is not separated from its producers and users, hence it involves a plurality of views and goals. Basic is human freedom, interpreted as the openness of human beings to each other and to criticism.

Ethical principles in the dissemination of information include accessibility, confidentiality, and completeness. Most important is not the establishment of a code of ethics but a promotion of discussion on ethical issues. The value of a code itself is doubtful: good people do not need it, bad people will not follow it.

Morality and ethics are not synonymous. Aristotle distinguished between ethics as science and as morality. Russell defined ethics as consisting of general principles which determine, but not to provide, actual rules of conduct. Moore formulated naturalistic fallacy of deducing moral categories from empirical or metaphysical concepts. 'Ought' does not follow from 'is', hence ethics is the search for the foundation of morality. Aristotle maintained that we start with intuition of the principles and combine them with knowledge by induction from interpreted sense-perception. Cybernetic approach calls for a review of morality within the complexity of moral and non-moral components, stressing personal responsibility.

"Ethics should not aim at the same kind of precision as other sciences. The ethical discourse can only give hints for personal and socially responsible action. Its two basic dangers are to fall into casuistry . . . or to consider itself . . . as a dogmatic guideline for action or as its theoretical substitute." (p.115)

---- 1991:

The author saw information science as a rhetorical discipline, based on formal-methodological and cultural-historical philosophy, derived from Heidegger and Gadamer's hermeneutical, and Wittgenstein's analytical, philosophical insights.

He criticizes the philosophy based on (a) paradigms of representation, codification and rational use of information; (b) the source-channel-receiver focus on the impact of information on its receiver; and (c) Platonistic focus on information itself, which is objectivized in nonhuman carriers of materialistic Platonism, and considered independent of any carrier in the idealistic Platonism. "In the case of constructivist theories the 'outside world' becomes completely determined by the structure of the living. For idealistic Platonism knowledge within the mind becomes objective about the psyche. It is something like a nonmaterial world." (p.85)

The discussions shifted from the cognitive to pragmatic approach early in the 1970s by focusing not merely on knowing the subject but also on 'anomalous state of knowledge', in which the knower is also a non-knower with a Socratic and heremenutical insight. "For the non-knower is a partial-knower, i.e., an inquirer, whose questions are based on a 'conceptual state of knowledge' that is part of the 'user's image of the world.'" (pp.86-7)

Hermeneutics stresses the holistic, social and practical, 'pre-understanding' approach, the 'being-in-the-world-with-others.' "Our being-in-the world is such that we are not first within our subjectivity and look afterwards for ways of getting out of it, but are basically open, i.e., able to be addressed

. . . by the meaningfulness or meaninglessness of things. At the same time we grasp this openness as finite." (p.88) Information is not a mind-related concept or economic exchange value, but a reflection of our pragmatic existence.

"Information science, conceived as a sub-discipline of rhetorics, implies a double-bind methodology. It must accomplish a self-reflection in a formal-interpretative as well as in a cultural-historical way. It has to resist the temptation to become a purely technical heuristic or meta-discipline embracing ethics and politics." (pp.92-3)

CARLSON, ANN D., 1990:

Basic in John Dewey's general philosophy, called 'instrumental' or 'experimental', is the concept of experience, "an operation that implies the cooperation of the individual and the environment." (p.112) It includes the idea of knowledge, which emerges from the interaction between individual and his environment. Intelligence interpreted experiences in terms of present, formulating hypotheses, tested operationally, about the future. This philosophy provided foundations for educational theory, stressing experience of 'learning by doing' as the basic aspect of education.

Dewey's philosophy is relevant to library education by relating library teachers' personal experiences and philosophy to their methods of teaching.

CARNOVSKY, LEON. 1940:

The dilemma of library policy is based on what the patrons want, what they think they want and what they ought to have. Carnovsky opposes McColvin's dictum that the library should have no opinion, motives, religion, politics or morals. Neutrality is confused with 'do-nothing', or 'refusal to take sides', and authority of autocracy to impose one's own will by force.

"I do not say we should tell people what policy they should advocate; I do say we should see that the undistorted and unsuppressed facts are fairly and unemotionally presented" (p.29), so that the decision can be based on the truth. (p.29)

---- 1944:

Library theory is often formulated in terms of structure rather than function. Library philosophy should address its role as an agency for preservation and maintenance of democratic ideals, its place in democracy, and its relations to the state.

The state is the means for the individual achievement of moral, intellectual and spiritual level; the individual is thus the end of government activities.

In fascism the individual exists solely for the benefit of the state. In democracy 'the greatest good of the individual is achieved through the superior intelligence of the lawmaker'. In the modern definition of democracy 'general will' is denied and the multiplicity of opinions is resolved by majority consensus involving cooperation and compromise. American 'social contract' transfers individuals rights to the elected representatives to act for them.

The library is (a) a sounding board of community interests, it represents the will of the community in selecting books the community wants, and (b) librarian is the intellectual leader of the community by mediating conflicting community wants or needs.

" Every public library . . . represents the state and exemplifies in itself the educational function necessary to bring about enlightenment. By performing this function, the library can make its own basic contribution to the maintenance of the democratic tradition." (p.11)

---- 1950:

There is a confusion between book selection and censorship, both may create identical effects from altogether different causes. Censorship is most often invoked in the areas of politics, religion and morals.

In politics the basic is the notion that freedom is not absolute, and hence courts have to determine when free speech becomes clear and present danger to the society.

In religion free speech is protected by more speech not by its restriction. Religious dialogue contributes to better understanding of different views.

In the area of morals the most sensitive is the issue of obscene literature. The limits of free speech are determined by author's intend, the possible effect of his work on the reader and the community consensus on the definition of obscenity.

---- 1963:

In this article Carnovsky defended the concept of the core course, 'The Library in Society', though by him in the Graduate Library School of University of Chicago. The course deals with theoretical issues of library ends, its social setting and historical evolution. Carnovsky included in this article papers of four of his students reacting to the reading assignment related to the philosophy of librarianship.

Susan Brinkmeyer argued for a meliorist position in the search for constructive approach to the problems of modern democracy, by offering a common ground between the needs of individuals and those of mass society.

Sister Marie Joan Connell maintained that it is not the function of the library to serve the few intellectuals at the expense of the majority of its potential patrons.

John D. Opem called for a redefinition of the concept of equality so as to allow everybody to share in the public domain. The public library is the reflection of its society, before it becomes a tool for its reshaping.

Levi V. Oracion zeroed on the concepts of library philosophy that defines the nature and function of the library within the context of the society. He criticized Plato's philosopher-king approach as a dream, and the compromise of the American public library between the patrons' wants and needs leading to the collection of insignificant material. The notion of a library 'ministering to the generality of men' is a task too difficult for the library to perform.

---- 1964:

Intellectual foundations of librarianship include: (1) Book selection that distinguishes between qualities of books. (2) Arrangement and organization of collections that consists of principles in the organization of knowledge and the logic of cataloging codes. (3) Guidance given to patrons in the use of a library. (4) Acquaintance and the principles of management. (5) Understanding of library history in terms of the social forces creating them. (6) System planning in terms of library functions, and (7) the philosophical and legal background of the freedom to read.

---- 1967:

The author identified major changes in library school curricula, which reflected the changing role of a librarian, the library and the impact of information technology on the basic philosophy of librarianship.

Nineteenth century colleges were textbook-centered with a small library, peripheral to educational programs. In sixties the library school curricula reflected two trends: specialization by library types and functions and introduction of nonprint media and computers, with a shift from the concept of self-contained library to library systems.

Carnovsky noted that there is a tendency to overlook "the distinction between the world of information and of things, and the world of values - between the things that contribute to our ease and comfort and well-being, and the values we possess as human personalities." (p.490) Technology cannot fill the gap between quantity and quality of library services.

CARNOVSKY, LEON and E.W. McDIARMID, 1934:

This is a call for a philosophy of librarianship. The public library formulates its own aims and is exclusively responsible for its actions, reflecting desires of its community. The standards are developed according to a philosophical viewpoint of what library ought to do; the logical consequences of these views should be examined. There is a need for objectivity by avoiding the definition of goals in terms of familiar library practice.

CARR, DAVID, 1981:

Information inquiry is serendipitous, and may lead to unexpected directions. The library search is based on the assumptions, that: (a) only one document can be evaluated at a time, (b) inquiry can change with every new document consulted, (c) every step in the search determines the next step, (d) each inquiry follows its own path, and (e) bibliographic inquiry evolves over time. New electronic technology may or may not assist in the above steps.

CARTER, DANIEL, 1981:

Changing conditions require constant review of library philosophy. If the wants/needs of library patrons are served better by other agencies, they will leave the library.

'Wants' are desires, often emotional, for the information. 'Needs' describe conditions rather than emotions, expressing an interest in a specific reading material.

Carter suggests that the review of library philosophy should start with the reexamination of library functions. Librarianship is defined as the community information service utility. The 'community' describes the territory served; 'information service' implies services that satisfy patrons wants; and 'utility' stands for a useful, wanted, and valuable library services.

Librarianship must redirect its objectives in response to "the way the data/information/entertainment/communication /advertisement reaches the user." (p.1386)

CARTER, G.A., 1948:

The author suggests that if there was a complete philosophy of librarianship, it would solve all library problems. However, as Broodfield points out, the philosophy does not contain the solution, but provides a knowledge used by people to solve the problems. Broadfield notes that the choice of philosophy determined by inclinations makes it an ideology, but the inclinations motivated by a choice of philosophy formulate library philosophy on reason.

CARTIER, CÉLINE R., 1982:

The author makes a distinction between human and technical aspects of networks, concentrating on the relationships between the two. Computer, although completely depending on human, helps to multiple the capacity of human brain for storing and fast processing information, by expanding the capacity of human brain for maximizing its creative potential. Human formulates hypotheses, the computer conducts experiments, analysis the results, draws conclusions and suggest further research. The networks formed by society further accelerate the evolution of mankind from initial isolation to sharing of information.

Information becomes available rapidly but for limited segments of society and new economy emerges with most activities and jobs based on the availability of information. The collection, processing and dissemination of information require little energy but a large number of information specialists. Network application will reduce the value of libraries but it will increase significantly the value of the librarians.

Networks will link people to information everywhere, but will also isolate the individuals physically. The impact will challenge creative imagination to adjust the moral, scientific and technological attitudes to the changing environment by developing worldwide network of information free of racial, political, religious, national and economic restrictions.

CARTWRIGHT, MORSE ADAMS, 1935:

In discussing the role of the American public library in adult education, the author points out that the library has succeeded in keeping itself free from propaganda by being non-political, non-sectarian and non-propagandistic.

In its development, the public library has changed from the role of custodian to an educator, stressing services to all, not in terms of 'what public wants' but according to the librarians professional responsibilities as a teacher.

The main objective of a public library is the reader advisory service to the individual, the provision of information to the inquirer and the supply of educational material.

CASEY, GENEVIEVE M., 1974:

Public library functions vary. (1) As a non-traditional agency for education it stresses individual approach offering the choice outside of school curricula. (2) As an information center, a public library provides material on all levels of interest to individuals as well as groups. (3) As a rehabilitation center it offers bibliotherapy to the handicapped and institutionalized public. (4) As the cultural center in a multicultural society the library provides a sense of people's cultural identity and appreciation of cultural heritage of others.

Cawkell, A.E., 1986:

Information and its facilities will increase where there are occupational needs and the necessary knowledge to use and pay for it. The cost of obtaining information will expand the gap between the informed and not informed people in England, giving power to the privileged minority of the society.

CHAKRAVARTY, N.C., 1959:

Because of an all-embracing scope of librarianship its philosophy is so vast that it cannot be compressed to a meaningful statement of the profession.

As a social institution, librarianship is based on social science, integrating its services with other social agencies and the social philosophy of the community it serves.

"The theoretical content of librarianship . . . embraces philosophy and science, as a concept, but it can hardly be interpreted or analyzed in philosophical terms or scientific methods of experiments." (p.12) Library success is determined by the advancement of knowledge itself.

CHANDLER, H.J., 1934:

The library is a part of a social organism; its philosophy reflects trends in current general philosophy. Three views of library role conflict with each other: one maintains that library should follow public demands for service, the other wants a library to lead as a cultural institution, stressing post-school education, while the third view sees a library as a business operation stressing quantity of recreative activities.

Chandler maintains that the first principle of librarianship is efficiency of service in response to legitimate demands and within existing resources; the educational role is considered as secondary.

CHATTERJEE, AMITABHA, 1964:

"The philosophy of any field of knowledge or profession can be formulated by: (1) identifying, analyzing and appraising the basic assumptions or foundations upon which practice within that field proceeds, and (2) orienting and relating these assumptions and the practices to all other aspects of life or to a larger whole." (p.133)

Kolitsch defined the nature of philosophy as consistent with social philosophy of the community, coexisting with other philosophies, promoting development of individual, society and library potentials, dynamic in response to changing environment and subject to self-criticism.

Broadfield maintains that only librarians can formulate their own philosophy. Rao Ramakrishna offers four approaches to such philosophy: (1) actional, focusing on functional, practical operations, (2) organismic, stressing the comprehensiveness of librarianship as a whole, (3) naturalistic, considering evolutionary development of principles and theoretical concepts, and (4) reflexive approach based on library functions reflecting social changes.

ALA's 'Library Bill of Rights' expresses the philosophy of library service as objective and relevant selection, resisting censorship, and cooperating with other social agencies. Ranganathan summarized philosophy of librarianship in his Five Laws of Library Science.

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CHATTERJEE, MRIDULA, 1974:

Librarianship is directly concerned with communication of knowledge from source to destination. and is affiliated with information science by utilizing its retrieval technology. Information retrieval system informs the user about the existence and location. but not the subject, of the records.

CHERRY, COLIN E., 1952:

Communications links organisms together. The commodities communicated are defined quantitatively in mathematical theories of communication. They are communicated through abstract language, expressing not a semantical but symbolic meaning (e.g., symbols for sounds in phonetic writing), using two-symbol codes (e.g.. long and short smoke signals. Morse or binary codes).

Messages of high probability of occurrence contain little new information; this lead to a mathematical principle that information expressed by symbols decreases with the increased frequency of its occurrence. Based on statistical analysis of the language frequency of use. information is compressed into mathematical symbols. The disturbances in the communication of signals in a form of a random appearance are called noise.

Electronic communication consists of an input, transmission and output of information. Computers are 'noiseless' allowing no mistakes, many-channeled and programmed; they break complex mathematical operations into elementary steps of data subject to logical calculation.

Symbolic logic allows for a mechanization of thought processes (e.g.. in the game theory); it is not the computer, its operations that are analogous to brain operations. The computer cannot create information, it merely manipulates it.

The automatic self-control device, stabilizes the dynamic systems by a corrective feedback of information (e.g.. homeostasis).

The recognition of received signals relates to the concept of learning, since the speed and ease of recognition depend on the availability of relevant information already possessed (e.g., learnt). The Gestalt focuses on perception of forms relate to the recognition of signals' problems.

Philosophical contribution to communication of information included the following writers: (a) Ampère, Andre M., who in 'Essai sur la Philosophie des Sciences coined the word 'cybernetique'' as a 'science of government', (b) Roger Bacon who suggested lodestone as a possible long distance communication device and introduced a bilateral code for assigning two different codes for each letter of an alphabet, (c) Descartes who contributed to the compression of mathematical information by his application of formula to geometry. He considered the possibility of creating an artificial universal language and envisioned a computing machine, (d) David Hartley defined information as the successive selection of symbols, rejecting 'meaning' as a subjective factor; (e) Leibnitz emphasis of symbolism lead to the compression of mathematical information and use of mathematical symbolism as a universal language of logic. He anticipated the 'reasoning machine', and (f) John Locke maintained that ideas in the mind are stored not statistically like books on shelf, but dynamically according to 'similarity', 'contiguity', or 'cause and effect.'

CHISHOLM, MARGARET, 1975:

"Philosophies are accepted or rejected not according to 'objective truth' but rather according to man's needs and temperament. Each individual must determine what the practice of this philosophy will mean in his or her professional life and personal interest." (p.59)

The author defines philosophy of library education as "a systematic intellectual endeavor to see library education as a whole and as integral part of culture and society." (pp.47). It provides determination, interpretation, and evaluation of library education problems related to the objectives, practices, and outcomes of the field.

---- 1985:

The statement that "every librarian is an educator", rests on the premise that organizing, retrieving and selecting appropriate information are all aspects of being an educator. (p.117)

Both, the instruction and teaching, are goal directed, instruction provides efficient means for accessing knowledge, teaching aims less on cognitive knowledge and more on the overall goal of creating environment conductive to learning.

CHRIST, JOHN M., 1969:

"Functional analysis is a tool with significant positive implications for library research because of: (1) its facility for investigating the social system of which the library is an integral part; and (2) its directions toward heuristic considerations and metaphysical theory long neglected in library science. The sociological approach rather than the mechanistic or mathematical approach to functionalism should be adopted by library researchers because of its ability to develop functional relationships rather than deterministic, causal relationships." (p.242)

Functional method is an analytical process interrelating specific phenomena that are essential and interrelated parts of an integral whole. It is based on two metaphysical assumptions: (a) that every action has a function, and (b) that societies are well integrated. Each assumption is qualitative and can be verified in terms of logical consistency but not with mathematical confidence.

The focus of functional theory is on directedness of a total system in the historical context; while that of the mechanistic theory considers parts as independent entities, leading to a cause-effect, deductive-inductive approach.

Disadvantages of functionalism include unsatisfactory (heuristic) explanation, and non-verifiable (metaphysical) theory. "But this is a point. What is needed in library science . . . is metaphysical theory, [from which] will come the functional theories and principles which will constitute the basis for a philosophy of library science." (p. 246)

---- 1972:

"This study has posited a dualistic theory of librarianship delineating two main segments to the discipline - communicational and educational librarianship." (p.146) "The continued development of communicational librarianship and its technical emphasis is essential to the development of educational librarianship. Both aspects of the discipline should function harmoniously, the one being vitally concerned with the efficient transmission of recorded knowledge, the other being vitally concerned with its use and the impact of organization as such." (Ibid.)

Philosophy of librarianship is a statement of library functions, primarily educational, in a form of independent and self-directing learning. Educational librarian focuses on knowledge-center philosophy (learning behavior) and on traditional retrieval.

The focus on communication as handling, transmitting and communicating recorded material illustrates the administrative viewpoint. Information retrieval does not inform by changing user's knowledge on the subject of his inquiry, but inform him of the existence, or nonexistence of documents relating to his inquiry.

Educational librarians concentrate on research as a learning process about bibliographical material and about the relationship between the organizational format of such material and the types of knowledge contained in them.

Researchers are preoccupied with knowledge itself, their concern with books is only indirect, while librarians focus on a generic book, and only indirectly on knowledge as a subject, topic or an organizational theme.

The literature search is an important aspect in research and education as a basic connecting point between the educational process and librarianship. Since knowledge is not fully indexed, retrieval is not a mechanical process (as e.g., finding telephone number in a phone book): it involves learning about a library organizational scheme, basic bibliographic tools and formats of resources. Both knowledge of library organization and bibliographic tools are basic to an educated person.

CHRISTENSEEN, PAUL MARTIN, 1976:

Jose Vasconcelos (1882-1959) was a Mexican educator and philosopher, involved in the development of librarianship in Mexico.

In this student's research paper, the author discusses Vasconcelos' philosophy in terms of its possible impact on the philosophy of librarianship.

CHURCHYARD, RUTH, 1978:

In this survey of literature the author identifies two conflicting definitions of bibliotheraphy: as a specialized treatment of emotional or nervous disorder, or as a popular guidance tool, which, through the reading of books, may assist the reader in their emotional problems.

A strong link was demonstrated between the ability level of the readers and the books impact on their intellectual development, but without influencing readers personal behavior, moral or ethical values.

CLAPP, VERNER V., 1960:

Libraries do not produce but merely serve as tools to those who support them. Libraries cannot be citadels of freedom, if they also served in the past as centers of distortion. Everything that can be used, can also be abused. Although libraries become the depositories of human knowledge three thousand years ago, their educational role to provide access to everyone is barely one hundred years old.

"If we say that libraries are the great potential of our society, that is because we have hardly as yet even begun to realize from libraries the services to human welfare and human enjoyment of which they are capable." (p. 307)

CLAYTON, ROBERT L., 1940:

The author opposes the authoritarian view that librarian alone decides 'in vacuo' what should be kept in the library and that his main preoccupation is with technical efficiency of service. Librarians' function is to connect a right person with a right book, which is more than mere dissemination of facts. Library collection objectively reflects man's thoughts. Personal involvement in serving the patron is more important than library gadgets or technical expertness.

CLIFT, VIRGIL A., 1970:

The approach based on providing services for patrons without their participation is limited. The sense of a community can only be developed if the community itself is "able to define the kinds of institutional services it needs and will be able to organize itself to work toward achieving these goals." (p.610)

COHEN AARON, 1981:

Libraries are major beneficiaries of new technology. The role of libraries is expanded by providing efficient access to information, and information is now perceived as a manageable commodity.

The library educational system is criticized by business corporations for its failure to train graduating students in the use of common tools relating to information, by teaching "students archaic procedures with little relevance to the real world." (p.56)

COLLISON, ROBERT L., 1958:

It is important to retain the belief in the value of library services to the community, especially during the time of financial crises.

The future of public library rest in people's desire for its services to improve community's intellectual environment. Part of the librarian's problems is his isolation in the community; the other is the self-searching questioning of the function of the library in a society. Librarianship is a social work requiring the service and devotion of librarians.

COLSON, JOHN CALVIN, 1980:

The social realities of librarianship relevant to library education are grouped in five categories: (1) social position of libraries reflected by a variety of libraries in multi-varied society; (2) Librarians' work determined by social environment rather than the work itself; (3) nature of library education is perceived as indoctrination of students who have preconceived notions what librarianship is; (4) function of professional association reacting to rather than providing leadership; and (5) technologies of information with a library as the product of that technology. It is important to analyze the foundations of librarianship, study libraries and librarianship, rather than teach library science; "we must seek to know the realities of our field." (p. 107)

---- 1983:

The 'library science' approaches to library education dominates the profession since 1920s with emphasis on social sciences (from Butler to Shera). Since 1972 there is a shift in emphases from 'library' to 'information science', implying however not the scientific method but its characterization.

The debate about the nature of librarianship reflects a confusion about different ways of learning: (a) science is based on observations and measurements in controlled situations, (b) history study records of changes. and (c) craftsmanship stresses performance in a technological context. In the first two approaches one learns about things, in the last approach, about doing. None of these approaches is sufficient for library education. because of lack of scientifically controlled conditions. lack of satisfactory historical records and inappropriateness of teaching specific library techniques in library education curriculum.

However, of the three approaches historical study of library development is preferred since it allows for a review of library development in the context of historical realities. providing at the same time for integration of other learning.

"There is no facet of librarianship which is not a function of development from what has been. In its parts and in its sum it is a social enterprise, blended from present demands on a system realized from past prescriptions. The study of librarianship, then, should be a study of development; the study of the processes of the perception of problems and the organization of responses to them." (p. 86)

COLUMBIA UNIVERSITY, 1990:

A severe criticism of the Columbia University's library school reflects major problems with library education in this country as evident in the closing of other library schools since mid 1970s. (Library schools closed at the universities of: Minnesota, Mississippi, Oregon, Southern California, Emory, Vanderbilt, Denver, Case Western, Chicago).

The criticism includes; (a) library faculty isolation from the instructional programs, research and intellectual life of the university, (b) weak research of little distinction, limited to traditional library functions, (c) lack of 'hard concepts' courses; (d) poor definition of the discipline's scope, "the management of information draws on many disciplines but is identical with none." (p. 6) (e) Curriculum does not reflect internationalization of the field; (f) the focus on professionalism is overbalanced; (g) the quality of the faculty and programs is low, (h) hermeticism and close association with libraries and professional organizations, and teaching is considered not as an extension of research but a substitute for it; (i) library schools are not essential in the development of information science and information management; and (j) there are sufficient number of public institutions that can prepare students for library work.

CONANT, RALPH W., 1967:

"Libraries of all types, should continue to be what they have traditionally been - facilities for the collection and dissemination of cultural and educational materials within the communities they serve. But the library leaders face the problem of defining what material falls within the cultural and educational categories in terms of the market of individual library institutions". (p.534) by distinguishing between appropriate and inappropriate goals.

CONVERSE, WILLIAM R., 1984:

Library research is broadly defined as a systematic investigation of library issues on theoretical, applied, experimental, quantitative, qualitative or conceptual levels.

Library roles as a teacher (orientation and instruction), and as research (private, non-curricular) concentrate on bibliographical or historical issues. Most librarians are managers of records serving as an interface between unsophisticated user and complex databases.

Information is defined as a resource and commodity, its value is determined by market price. In the future, libraries may become depositories of unwanted information, and the access to information may be determined by the ability to pay for it.

--- 1987:

Information society is a term introduced in the 1960 and 70s to redefine social reality of information transfer. Information becomes an economic good (a commodity), and political freedom is defined in economic terms as freedom of information and as a form of intellectual property in a free marketplace.

Privatization of information assumes that it is better handled by private than government agencies through free market demand and supply. Libraries are information markets, expressing needs of its clients. Their function is to reaffirm the concept of information as a public and economic good, available to all citizens, and by using economic theories and models in analyzing library operations.

COOK, GORDON, 1976:

This is a review of literature on the theory of information science published between 1971 and 1976. Glynn Harmon (1971) anticipated development of information science as metascience, without defining it, in a form of specialized subfields of information, each describing skills rather than a theory of information.

Louis Vagrianos (1972) summarized various views on the theory of information science in four groups: (1) as research based on pure and applied sciences, (2) as a theoretical science explaining basis of librarianship as a profession, (3) as a unifying meta-science, and (4) as an information technology.

Artandi (1973) noted that information science does not defines information but describes its manifestations, concentrating on the problems and answers to them by using methods from other disciplines.

Victor Rosenberg (1974) maintained that information science deals with human communication, not with machine processes, and hence it should concentrate more on social, cultural and spiritual values than on deterministic, reductionist and mechanical scientific values.

Slamecka (1975) argued for information science as a science motivated and supported by the applied objectives to control scientific literature toward a management of knowledge as a social and national resource.

B.C. Brookes (1972) strongly objected to Wellish's call for clear definition of information science based on content analysis, offering instead a circular definition of information science as a study of information.

Among Russian writers, E.P. Semeniuk (1971) noted that Shannon's theory is a theory of measurement, investigating not the information itself but its quantity. Mikailov, Chernyi and Giliarevski (1969) called scientific information processes as 'informatics', aiming at the efficiency of communication by processes, storage, retrieval and dissemination of scientific information. They focused not on the generic information but on its activities. In this sense informatics relates to semiotics, psychology and library science.

COONEY, J.P., 1987:

The professional salaries in the field of information are determined by the economics of the marketplace. Value of information can be considered as (1) an intrinsic, metaphysical quality, (2) the effect of its production cost; (3) the product of supply (based on a biological pattern of replication) and demand (generated by information already acquired), and (4) as a function of utility (derived from the value of something else).

CORRIGAN, P.R.D., 1974:

The development of information science sociology is related to the work of Robert Fairthorne who identified information science as a subsection of sociology and studied the creation, use and retrieval of recorded information. Library semantics is physical. librarians handle recorded 'discourses' but do not 'use' them. The activities of librarians are linguistic, referring to written records and their interpretation by the readers. Knowledge "is a product of a particular combination of people and problems and associated communal practices and conceptual vocabularies." (p.134)

CORRIVEAU, JEAN-PIERRE, 1987:

A model for a 'reader-based understanding' of reading process describes private experiences of the reader. The brain is divided into a foreground area, containing causal links extracted from the text, and background area of knowledge previously acquired. Understanding the text involves linking the two areas as the trail of mental reasoning, called text comprehension.

COUSINS, NORMAN, 1959:

Liberation of atomic energy and the conquest of earth gravitation by man-made satellites resulted in the greatest changes in the history of the world, affecting science, systematic knowledge and philosophy. The library considered symbolically as the universe of knowledge, provided material needed for human adaptation to these changes.

The "urgent and overriding need is to convert facts into logic, free will into purpose, conscience into decision . . . historical experience into a design for a sane world . . . processes of education into those ideas that can make this globe safe . . . individual morality into a group ethics." (p.1959) "The library can be a strong part of the new conversion process. It can furnish the basic materials that must go into the making of the new purposes and designs."

CROGHAN, ANTHONY, 1958:

The librarian is a custodian of books, not an educator. His main obligation is to provide the reader with the book he wants. Both, the librarian and the book, must relate to the outside world. The liking of books is the most basic criterion of a good librarian.

CROWE, LAWSON and SUSAN H. ANTHES, 1988:

Librarianship is involved in political activities in order to protect freedom of access to information and to resist issues such as privatization of public information and fee for service. The quality and nature of service are as significant as library collection. An academic librarian must be patron - rather than medium - oriented.

"An ethical action must take into account the common moral framework of values . . . based on rational assessment of particular circumstances. Unquestioned conformity to rules and regulations is neither a necessary nor sufficient condition to make an action ethical. We must ask why we accept the rules . . . what interest they serve, and what values they protect." (p. 127)

CRUNDEN, FREDERICK MORGAN, 1904:

The library is essential at all levels of education by leading to the betterment of society and its culture. While the school influences the child for a few years only, the library's influence through self-education is for life. It is a repository of records of civilization, a custodian, the preserver and the principal mean of disseminating knowledge.

CRUZAT, GWENDOLYN S., 1980:

The system is defined as a group of interrelated or interdependent units, linked together in an environment, forming a whole. The systems are either open, interrelating influences of different elements within and outside of the system, or closed, focusing on the internal relations only.

Medical librarianship is a system consisting of the professional schools, the profession and the professional association. It is an open system importing energies from these subsystems and transforming them to the professionally recognizable products.

CUBARIAN, O.S., 1971:

Early in the 20th century some writers broadened the subject matter of librarianship by recommending inclusion of research into the history of scientific literature. The reaction was either to expand the scope of librarianship into the economics of books, its history and bibliography, or to deny librarianship its scientific research status. In USA the theory of 'free choice of books for reading' and the 'non-interference of libraries in people's reading' is considered by the author as diverting library theory from its original scientific path, by depriving it "of the right to study the essence and aims of the library processes, the influence of libraries on the formation of the social conscience by guiding the people toward the best books." (pp. 337-8)

The task of the 20th century librarianship is to study relationships between book and society, emphasizing the social character of the discipline. Library theory becomes a social science, using its research method to focus on "the forms of mass communication, as a means of forming social consciousness and of disseminating knowledge." (p. 339)

CUMMINGS, MARTIN M., 1986:

Cummings maintains that: (a) The exponential growth of published materials will strain libraries' acquisition, organization and distribution of knowledge; (b) Computer storage and retrieval systems will increase the capacity at lower cost, but the cost of telecommunication will increase; (c) The change will result in decreased acquisition and increased interlibrary lending; (d) demands for physical space will be smaller; (e) The integration of libraries and information agencies with their parental organizations will increase, allowing libraries to compete with commercial agencies in their services to the patrons.

CURRàS, EMILIA, 1984:

The author discusses moral and social implications of new technologies in Information Science, arguing that paradoxically new technology creating sociological and psychological crises are also a means for resolving these crises by understanding and use of new tools.

'Information' is considered as a phenomenon independent of processes, and as a process converting facts into data. Both are transmitted and perceived by the same technical processes.

---- 1985:

The author maintains that information science emerged from humanistic environment of library science, archeology and documentation. Humanity is a close system, producing information by breaking matter into energy, constantly recycling and assimilating it in order to maintain equilibrium. Human as a body and spirit transforms his external world into internal through a documentary-informative process, aiming at happiness expressed by the equilibrium between his body and spirit.

Various theories describe the components of internal equilibrium, and are illustrated by (a) 'epistemological' theories of Korean, Su Myung Moon principle of unification embracing principles of polarity, interaction and duality; (b) Trismegistus religious, political and magical relation of man with his environment, (c) Pensatics organization of thoughts through reading, memory and practice, and (d) Poppers materialistic and positivistic three worlds (man's external surrounding, man himself and his work).

---- 1987:

The theory of knowledge is based on 'informationism', a concept introduced by the author in 1981. She defines information as "a response caused by an external stimulus that conditions one's form of behavior." (p.150) It can be of two kinds as a phenomenon or a process, both communicated by being transmitted and perceived.

Information is an essential component of human life, carried through genes; it differentiates between individuals, different cultures, and human inequality. The author notes a trend for homogeneity by exchange of information between cultures.

CURTIS, PATRICIA, 1970:

This is a report on the author's interview with sociologist Peter Berger on the growing anti-intellectualism in American universities. The danger is less from the extreme left activism or right attacks on academic freedom, both trying to revolutionize the university, but from the middle representing 'youth culture'. This group calls for (a) majority voice in the university's governance, (b) relevance of school activities to the students needs, and (c) pragmatic career orientation. The impact affects the scholarship since it will reduce academic standards, lessen academic discipline (scholarship does not have instant relevance to anything), forcing introduction of therapeutic sensitivity, encounter courses (all inimical to scholarship), eliminating the study of languages and philosophy as required subjects.

The result may be an emergence of three kinds of universities providing: (1) education in sciences, (2) sensitive egomaniacs education or (3) humanistic education for the privileged few, who do not have or want to, work. Thus the majority of students share with the minority of activists profound anti-intellectualism.

The impact of anti-intellectualism on university libraries, although not referred to in the interview, is directly relevant to the changing environment of academic librarianship.

CUSHMAN, JEROME, 1960:

The public library should pay more attention to the individual patron. John Locke's philosophy that man should be governed by their own consent influenced American library movement to shift from 17th century's focus on religious motivation to social argument for the importance of universal education. The 18th century social library of Benjamin Franklin lead to the establishment of a free public library in the following century. Librarianship, with its egalitarian background was slow to adjust its acquisition policies to that trend by continuing to focus on collections in depth at the expense of light reading, serving the minority of population.

The communication revolution in the 20th century led to the expansion of library services to the untapped community interests, by including non-book material.

To justify its role in the society, the library must be totally committed to cultural needs of its patrons.

---- 1962:

The philosophy of the library adult education is an expression of the democratic idea that man can educate himself. The library is an educational institution, dealing with the 'spirit of man', adjusting to changing times.

Among the obstacles to change is the habits, inertia, self-satisfaction and professionalism, each weakening orderly change. The library ought to provide information that will enable the people to bring about effective, evolutionary change.

---- 1965:

Some librarians are forced to abandon the philosophical position on book selection in face of local opposition, which confuses book selection with censorship.

"A book is a disturber of complacency and status quo. It acerbates uncertainties, causes disagreement, and even rage within a community." (p. 3554) The main pressures on book selection are from the community. the library board and the book selection staff, all sensitive to the nay sayers. The solution in part is in constant communication with those groups, reminding them that "freedom to read has the same acceptance in the mind of the public as good library service." (p.3557)

CZOPEK, PAUL, 1984:

All writings in the philosophy of librarianship search for the statements describing goals and purposes of librarianship, but no such statement is universally acceptable.

Melvil Dewy considered library science not as a preserver or storer of knowledge, but as and educational force in a community. John Cotton Dana viewed the library as a center of learning. In 1930s Lowell Martin discussed library social and 'individualizing function' in socializing an individual. Arthur Bostwick stressed love of books. Ernest Richardson proposed a businesslike approach, with knowledge as library business. Archibald MacLeish provided 'romanticized' view of a library as a means for understanding the meaning of life.

In 1960s Jesse Shera saw a librarian as a mediator between readers, books society and graphic records with automation as a means to better understand the relationship between the mind and printed records. Genevie Casey identified education, community information and cultural center. Betina Wolff argued for equal access to communication channels.

-The author maintains that philosophy of librarianship did not made progress in the last hundred years, partly because it overstressed the importance of the library as an institution, rather than to pay more attention to the individual librarians.

- D -

DA COSTA, A.F.C., 1990:
Da Costa discusses interrelationships between Information Science, Librarianship and Documentation, by tracing the origin of Information Science to the emergence of the concept of information as an important factor in social development. The approach is based on the Western interpretation of the discipline from the Brazilian viewpoint.

DAHLBERG, I., 1992:
The author discusses the role of logic, theory of science, epistemology, ontology, phenomenology alethiology and metaphysics in the organization of knowledge

DAIN, PHYLIS, 1975:
This is a response to Michael Harris's (1972) revisionists interpretation of the history of the origin of the American public library movement, claiming that the public library was founded by upper class men as a means for preserving social order.

Dain's theme is that although the public library was started by the elite and has not been and still is not representative of the total community, does not mean that public library was not needed or wanted by the people.

Initial intellectual character of librarianship was created by bookish people, who like most intellectuals, seldom come from poor or uneducated classes. Librarians claim that their knowledge of what is good for their patron is in line with the position taken by other professions. The idea of public, democratic participation in formulation of goals is a current notion.

Harris also criticizes the library of the 1940s for abandoning its neutrality as keepers of intellectual records, and librarians for becoming unthinking technicians and bureaucrats. Such goal displacement, Dain claims may well be the natural history of large organizations. She sees the period of 1920s through 1940s as a period of self-searching.

---- 1978:

"We can and should borrow intellectual and methodological baggage from historians of other subjects, but we must fill this baggage and give it shape through serious research of our own, and do it with a certain suppleness of mind. Though libraries have had an educational function, they are not schools; they have been conceived as social service agencies, they are not settlement houses. Their insight, therefore, and the theories of historians of education or of social reform movement can only be suggestive for us library historians. We have got to do the groundwork in our own field as they have done in theirs." (p.47)

DANA, JOHN COTTON, 1896:

The author calls for better public relations effort to increase public appreciation of librarians' work and to recognize the work of fellow librarians who are developing library science.

---- 1906:

The library is a cultural force in a society; it should promote incentives to read, mutual understanding among minorities, social harmony and serve as a reconciler of group conflicts. It provides an index to facts, theories and life, it supplies incentive and stimulus to scholars, serves as a source of delight to a general reader, and promotes sympathy toward common customs, ideals and aims, by stimulating inquiry. Books originally written for elite are now available to everyone.

The library should develop a commercial approach by advertising its holdings and services through newspapers, preparing reading lists and inviting users to the library as a part of public relations.

DANIEL, EVELYN. H., 1982:

A modern scientist is not a scholar but a researcher who requires an access to a vast range of information. Not interested in the full knowledge context of the information, he applies selected information to his own theory. The interest is in fast and efficient access to information. Printed records are used more as historical precedence than as the communicators of new ideas. Hence library collection may be more politically than substantively motivated.

Main interest of scientists is in the findings, results and methodology used. Social scientists are more methodology-focused, while humanist are concentrating on literary criticism: all of them utilize a computer.

There are three information worlds: (1) library and archives focusing on historical time frame and storage of records, summarizing the meaning of the documents, (2) clearinghouses and information centers containing collected and organized but not evaluated information, focusing on current documents, and (3) the world of computer manipulation of numerical, machine-readable data.

---- 1987:

The contemporary library science curriculum shows little macroscopical change. It is still based on the quadrivium of cataloging-selection-reference-administration. It however, changed significantly microscopically by expanding technical subjects, changing its focus from libraries as institutions to information and increased awareness of a need for applied research, emphasizing information management rather than information science.

There is a shift in attitude from 'how' to 'why', from techniques to philosophy, from doing to thinking, from accepting to questioning.

ALA recommends a core that would include principles and fundamental aspects of the basic functions of libraries, organized into 3 areas: (1) knowledge (philosophy, foundations of information in society, environmental, contextual knowledge and its management), (2) tools (quantitative/analytical, such as systems analysis, or bibliographic organizational), and (3) skills (communication, technological and interpersonal relations).

DANTON, J. PERIAN, 1934:

"The purpose of this paper is fourfold: (1) to point out the lack of any adequate existing philosophy of librarianship; (2) to consider briefly the place of the philosophical approach to the study of librarianship; (3) to indicate some of the ways in which . . . the creation of a philosophy would prove advantageous; and (4) to suggest briefly some of the problems and questions which should be considered in the formulation of such a philosophy. (p.527)

"Librarianship or library science is that branch of learning which has to do with the recognition, collection, organization, preservation, and utilization of graphic and printed records." (pp. 528-9)

The author suggested an approach that focuses on library functions defined not in terms of metaphysics or philosophy but as aims and objectives, expressed in a theory, and principles.

Metaphysical or 'geistesgeschichtliche' philosophy will be developed later, by answering the question: "Is the library an institution merely or does it contain within itself the germs of a philosophical relation to epistemological progress? " The question is in part answered by Danton by stating that "the library as a social institution is . . . but one phase of its philosophical implications." (p.550)

The importance of a philosophy is in facilitating a recognition of librarianship as a discipline, providing professional unity, validation and meaning for its technologies and clear knowledge of purpose.

---- 1941:

The function of the philosophy of university librarianship is to bring together, coordinate, and unify the philosophies of all other university libraries, and to reconcile differences between library practices and theory. However, since no two institutions have precisely the same detailed policies and objectives, each library must evolve its own specific philosophy, based on the aims of its institution.

The university library has a twofold obligations: (a) to scholarship, research and the professional schools, and (b) to undergraduate education. The primary function of libraries must be to secure, make available, and conserve the material of research, to offer aids to class teaching and to develop habits of intelligent reading among students.

The library is only means to the end of making records of human experience available to others. "Hence, even though the university library may have metaphysical implications of its own, the base of library's philosophy must rest upon graphic records and readers considered from the point of view of the function and objectives of the university as a whole." (p.203)

The criteria for this 'philosophy of the philosophy' of university librarianship includes: (1) cognizance of the aims of the university to disseminate and advance knowledge, (2) harmony with the philosophy of the university, (3) systematic foundations, based on the results of scientific investigations in fields such as reading, education, psychology and sociology, (4) empirical in its base, (5) comprehensive in its outlook, (6) consistent in its several parts, (7) in harmony with the conditions of its time, (8) feasible in its provisions, (9) satisfying, at least to the minority of librarians and (10) based on graphic records and student-readers.

---- 1973:

Comparative librarianship is a method and approach. The 'comparative' means placing similarities and differences in direct juxtaposition with one another, explaining the differences in terms of all relevant aspects of the social milieu. The focus is not on information about library phenomena in different societies (international librarianship), but on inquiry into the phenomena, conditions and factors which account for the differences (comparative librarianship).

Basic is the comparison; it implies a membership in a specific class, compared within the same or similar classes and having some shared characteristics. (Malinowski disagreed, he felt that one cannot compare incomparable, since each culture must be considered as a unique product of the cultural whole).

Comparative librarianship is a part of library discipline, a field characterized by its primary method (comparison), its scope (cross-societal, cross-cultural), its interdisciplinary nature, and its aims (the search for and explanation of similarities and differences). It is a horizontal explanation supported by vertical, historical approach. It differs from other library sub-disciplines in that it has no direct relationship to another single discipline.

Basic purposes of comparative studies is the search for explanation, or knowledge of causation and the search for principles about the observed phenomena, not merely to list or describe them. Comparative librarianship is the analysis of libraries and their systems in two or more national, cultural or societal environments, in terms of socio-political, economic, cultural, ideological and historical context. Comparative method is concerned with philosophical questions 'what is' and not 'what ought' to be; it is not a normative method, it does not prescribe but try to understand what and why is being done, considering ideology, socio-economic, national, and religious prejudices.

The philosophical predecessors of comparative studies were, (1) Comte, who argued for scientific principles in the study of society, similar to that in biology by comparing different states of human societies resulting from racial, climatic and political factors. (2) Spencer, who equated changes in society with biological growth, and (3) John Stuart Mill whose System of Logic developed logic for science of society, based on (a) causes that produce the state of society generally, and (b) laws of changes. All three approaches were not the methods of inquiry but preferred solutions to problems.

Chase Dane (1954) defined comparative librarianship as "evaluation of philosophies and policies of librarianship on an international scale to determine long-range trends, to appraise shortcomings, and to uncover contradictions and inconsistencies between practice and theory." (p. 29) This is more a statement of purpose than a definition.

Foskett (1965) stated that comparative librarianship implies cross-national, cross-cultural, or cross-geographical considerations, rooted in the understanding of the social forces which produce the library and the causation for these phenomena.

Most satisfactory definition of comparative librarianship was provided by D.Collings (1971) as "a systematic analysis of library development, practices, or problems" considered under different circumstances and in different context, searching for causes and effects in library development. (p.40)

DAVENPORT, ELISABETH, 1991:

Information science is discussed in terms of Farradane's 'physical representation of knowledge'. "The author proposes that an extended class of objects (loosely described as 'postdocumentation') is a proper focus of attention. These objects have emerged from the quantum environment, or electronic publishing, which offers the possibility of combinatorial text and new exchange relationships, and may require new forms of control. (p.286)

DAVIS, CHARLES, H., 1981:

The extend of the inclusion of information science courses in library schools suggests an interdisciplinary field called 'library and information science'.

Major courses offered should include: (1) The concept: organization of information (indexing, classification, document surrogates), the nature of information (its role in society and the growth of knowledge), education and research in information science. (2) The theory: Boolean logic (set theory, document retrieval), mathematical models (bibliometrics) and evaluation of information systems (recall, relevance). (3) The computer related subjects: introduction to computers (computer programming), information system design (systems analysis, flow charting, operations research) and online information retrieval. (4) library related subjects: library automation (networking), management (information systems, data base management), economics of information systems and professional organizations (career opportunities).

---- 1986:

Library and Information Science is an interdisciplinary field with roots in the Nineveh Library (669-630 BC). It addresses all phases of the information transfer processes including information theory, technology and service, considering them either as overlapping or logically connected.

Library research contributes to the historical and bibliographic scholarship. It concentrates on the relationships between the user and reference librarian. This approach is difficult because it requires informing the user about the study or observing his behavior secretly, thus either influencing the research outcome or violating user's privacy.

DAVIES, D.W., 1974:

This is a critical review of the motivation in establishing American public libraries in the 19th century. The author describes a paradox between the library function to facilitate reading on any desired subject and its social role imposed on in by the society. Founded by cultural elite to uplift the masses by reading, the libraries were not heavily used. To attract the patrons they shifted their focus to nonbooks, cultural and social activities.

DAVIES, ROY, 1981:

Information retrieval and cataloging are the two fundamental aspects of librarianship, useful to other disciplines. Bradford's law of scattering implies the interdisciplinary nature of knowledge; knowledge is interrelated but information is dispersed, librarians became facilitators in communicating information. Philosophic considerations determine the attitudes toward technology. The special library's philosophy was always shaped by parental organization's attention to efficiency, focusing on information not on the documents.

The author cites two examples of scientific methodology that are based on library concepts: (a) Fritz Zwickey's morphological analysis, in which all information relevant to research is grouped together in facets, and after calculating all possible combinations, the feasible one is selected for further study; (b) Honeywell Corporation relevance tree which is a hierarchical diagram of relative significance of different technical alternatives, from which relevance numbers are calculated and compared with others for the most advantageous alternative. This is an example of a planning tool based on classificatory technique.

DAY, ALAN, 1975:

"Don't let us make the cardinal mistake of going overboard on . . . [outreach] programmes, captivated by the new catchwords, to the detriment of our traditional clientele . . . don't let us fall into the error of deluding ourselves that everyone is fully capable  of benefiting from a library service." (p.225). "The sooner we admit this, the better we shall husband our scanty resources." (Ibid.)

DE BEER, C.S., 1992:

Knowledge is the most fundamental need in understanding one's environment. The author focuses on the 'unreduced' knowledge, with emphasis "on knowledge as the point where information, theory, description, perception, methods, etc. converge and thus display their interdependence." (p.195)

The author argues for eliminating disciplinary boundaries, by using interdisciplinary techniques and theories in research, linking skillful performance with imaginative thinking.

---- 1993:

The author discussed Manfred Kochen's idea of a 'World Information Synthesis and Encyclopaedia (WISE)', aimed at stabilization of the growth of knowledge, and its implications for the librarianship and information profession. Kochen foreseen a library as one of the institutions involved in consolidating the fragmented, specialized knowledge. "He distinguished between 'the traditional library' and 'the modern library'. 'The traditional library' he characterized as being 'primarily concerned with the collection, preservation, physical organization and use of books as physical objects.'" The modern library is characterized by Kochen as a new institutional form "which is parallel to the traditional library, but which is primarily concerned with content, abstracted from any physical form'. It is this new institutional form that is of central interest to information science." (pp.101-2)

DEAN, NITA, 1988:

This is a summary of various papers presented at the conference about library future. Two major concerns were expressed: the worst fear that public library will disappear and nothing will take its place, and the greatest hope that public library will remain fundamental to the public.

Possible scenarios for the future were presented: (1) emergence of high-tech information society (electronic information displacing books), (2) nothing decisive happens, (3) increased government involvement (captive society), (4) an increased role of libraries (creative society) and (5) a changing focus from access to selectivity.

Access to information is essential for most people. Marketing will be important to improve the library image and to obtain resources. One of the solutions is less staff-intensive service. Networking provides opportunity to stay small, leaving experimentation to other institutions.

Others argue that librarians should be involved in politics and use their constituencies as power brokers. Libraries will always be in transition, but technology doesn't do anything, people do things. Author calls for need-driven, not vendor-driven, technology.

"Direction of a positive future: moving from a central to a distributive system: from national to global: from technology for staff to technology to empower the end user; from the container to the content: from information to knowledge and wisdom, from access to selectivity . . . offering self-service and convenience." (p.19)

DEARDEN, J., 1987 :

Information technology systems are important strategic tools. The concept of centralized information system (IS) was initially necessitated by economic limitations of the evolving technology, and the use of one computer mainframe by all departments. With the less expensive information technology, IS will either be established as independent profit centers, independent subsidiaries or as an outside agency.

The creation of an automated management information system consists of 3 steps: (1) development of a basic system (information needed and its availability, processes, cost and output), (2) development of procedures and flow charts for processing information and (3) a computer program to automate developed procedures.

Anticipated problems with decentralization are: (a) linkage between different users of a computer: single integrated system is expensive; the networking depends on the size of common data base available for the participants (b) compatibility: it is needed for interfacing, and is being addressed by manufacturers;

(c) duplicate program and consistency will be avoided by decentralization.

It is a fallacy to maintain that information systems are homogeneous, or that all information must always be available instantaneously; they vary in purpose, content and required availability; no one is an expert in all systems, hence decentralization of information systems is logical.

DEBONS, ANTHONY, 1974:

Information can be considered as: (1) a process (engineering), (2) a commodity (economic), or as (3) an environment (system). Information science bridges these three dimensions (i.e., it is a metascience).

Information is a coded fact and a process of knowing. It thus consists of two components: "that which is received and changed by the internal system and that which is directly applied in man's interaction with his environment." (p.465)

A distinction is made between generation of information (transferring data to information) and communication (transfer of information from one place to another through the representational process). The two aspects of information are often confused.

The information phenomenon has three components: (1) as an act or a process of inquiry, (2) as the application of the results of inquiry, and (3) as a communication or information transfer.

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---- 1985:

Library and information sciences are related: the library is an institution concerned with the efficient and effective access, storage and retrieval of information; information science is a theoretical study of integrating librarianship, computer and communication into a totality of information system.

Information system is a product of increased knowledge, developed to retrieve information needed to solve the problems at hand, by means of data processing technology.

All three are parts of totality of knowledge environment at the meta-level. The knowledge environment refers to the total recorded experiences and to the means of applying them toward human development.

"It is thus not library science, not information science, but knowledge science, incorporating all the sciences that are dedicated to the principles and laws regarding generation, use and dissemination or transfer of knowledge." (p. 67)

---- 1990:

This is a review of a debate between the proponents and critics of the use of standards in information science, as a part of establishing a formal language of the discipline.

---- 1993:

The subject of information science is the understanding of the ways in which human process energy by analyzing and designing systems that enhance human capacity to deal with it. Knowledge is an extension of that awareness, while information systems, developed in different disciplines, augment the human awareness of the potential value of information, as e.g., in business, as decision support systems or expert systems of artificial intelligence.

Three major types of knowledge are interrelated. (1) Logistics of acquisition, storage and distribution of resources by arranging symbols in order as data that can then be manipulated. Automata theory maintains that any experience can be processed by machine if the factors related to the experience can be expressed quantitatively. (2) Cognition related to the thinking, remembering, learning and perceiving. It determines the limits of human response to environmental and stimulation; the psychophysics concentrate on the study of relevant response mechanisms. (3) Communication binds together various parts of a system by facilitating transmission of data (e.g., Shannon theory). Its significance is in providing necessary and sufficient condition for the transmission of data.

De GENNARO, RICHARD, 1982:

Most predictions about the future of libraries are made by theoreticians who are not responsible for implementing their ideas into practice. De Gennaro disagrees with the notion that librarians should become principle managers of information in information society; libraries will continue to contain and provide access to the recorded knowledge, but will not be able to manage all the loosely defined information.

Libraries will not become obsolete, they will continue to serve as a link between the researcher, the indexed and abstracted collections, and they are becoming "more, not less, important in our information society even thought their relative share of the total information market is declining." (p. 1054)

De MEY, M., 1984:

The invasion of printing presses in the 15th century is comparable to the introduction of microprocessors. Both represent a major cognitive revolution democratizing technology by increasing the accessibility to information. The shift from script to print eliminated transcribers' errors, who did not understand the text they copied. Printed books provided a much better representation of the often idiosyncratic features of perceived concepts. They also allowed for easier comparison of different texts. "The new technology serves to fix and preserve what has been achieved, before it can be used to express what is to be newly discovered." (p.100)

The computer technology increases the flow of knowledge, and results in a shift from static to dynamic knowledge, with users of knowledge manipulating its sources. The understanding of interactions between users may clarify scientific processes and the working of an individual mind. "The key seems to lie in our grasping the dynamics of apparently simple conversations: Socratic questioning, Galilean dialogues, Piagetian talks with children, and possibly, conversations between librarians and users." (p.109)

DeHART, FLORENCE E., 1979:

The conceptual framework for behavioral attitudes consists of understanding the attitude and behavioral skills of human communication. Important is the inclusion of common sense in the interpersonal relations. However, because of a very complex nature of behavioral science, "no neat, monolithic approach can provide the whole answer to the librarian's search for guidance in human relations." (p. xiii)

The author presents a descriptive, not prescriptive, framework for interpreting behavioral skills in librarianship, which should be a part of librarians know-how. A conscious adaptation of psychological commitment toward oneself, staff and patrons can improve professional behavior.

DEMBOWSKA, MARIA, 1974:

Informatics and the science of science ('naukoznawstwo') are similar: (1) both are complex domains studying issues related to the theory and practice of various phenomena, (2) both contribute to the efficiency of research in social sciences. The two approaches differ in the kind of information addressed: the science of sciences focuses on primary information, informatics is concerned with information transfer and dissemination of primary and secondary information.

DERR, RICHARD L., 1983:

Theory is defined as "a logically interrelated system of concepts and propositions pertaining to some phenomenon or set of phenomena." (p.195) Its primary function in basic disciplines is to describe and explain the nature of human and physical environments.

In professional disciplines the primary function of theory (called 'applied' or 'practical') is to provide directions to professional practice often borrowed from other disciplines. In librarianship, theory directly relates to information transfer. It bridges the organized knowledge of other disciplines with library practice. Knowledge so borrowed is relevant "if it identifies conditions within practical settings which inhibit or facilitate the efforts of practitioners to achieve professional goals." (p. 203)

The theory can be integrated into practice by (1) teaching applied theory, (2) applying it to specific problems, and (3) by using solutions to problems as a way of developing skills.

DERVIN, BRENDA, 1976:

For many people information needs are not satisfied within the existing information systems. Information itself must be managed in order to be accessible.

Information systems consist of individual citizen, information needs, sources and solutions to these information needs.

There is a gap between the average citizens and the understanding of their information needs. It is created by misunderstanding of the concept of information, and of the role of information keeper as an advisor and advocate, providing information.

Prior research focused on the user relation to information sources rather than on the relations of sources to a patron's needs. A distinction must be made between problem solutions that are either information or resource based. Lack of information (i.e., a need for it) leads to search of resources for it: but if resource does not exist, information itself becomes irrelevant. Furthermore, if the resources are inequitably distributed, limiting access to them, the issue is more of the power and advocacy than on information itself.

"The electronic media incorporate only 'ends' information (information about goals) without presenting 'means' information (information on how to attain the goals)." (p.34) 'At least three different types of 'means' information are needed to satisfy everyday needs for: (1) information about alternative means to achieving an outcome, (2) information about criteria with which to evaluate the means, and (3) data that allow criteria to be applied to means, so that final decision can be made." (Ibid.)

---- 1977:

In the past books were the best technology for transmitting ideas and library buildings were means for protecting them.

Library systems were defined in terms of these structures, which are now being replaced by new technologies with new structures.

Information is a tool for reducing uncertainty by describing and predicting reality. The individual user's needs for information are considered by the library as unessential, as a typical or average that ought to be adjusted to the existing library system serving the community.

An alternative view sees people as being involved in an information process. Information itself is seen as (a) data that describes part of external reality only, its structure and pattern, ('information 1') and (b) as an idea, the structure of internal reality ('information 2').

The above distinction shifts the focus from information 1 to information 2, differentiating between their objective realities. Individual users move between the two realities according to their behavior, which becomes 'information 3', evident in decisions or preferences, each influencing creation of different information 2 in the same context of information 1.

Hence in dealing with an individuality of patrons one must consider a particular situation as seen by a given individual. Library research ought to concentrate less on the kind of library patrons and more on the kinds of situations in which patrons use libraries.

"The assessment of library activities within the context of a communication model results in assessment focused on how libraries can help people inform themselves, create their own orders, and establish their own understanding." (p.29). "The research is centered on the entity - the user or potential user, who gives the library its real reason for being." (Ibid.)

---- 1992:

Sense-making is "a set of metatheoretical assumptions and propositions about the nature of information, the nature of human use of information, and the nature of human communication." It "refers to a coherent set of theoretically derived methods for studying human sense-making." (pp. 61-62)

Sense-making is based on the assumption of discontinuity in perceiving reality, focusing on the conceptualization of information as a phenomenon independent of human observation, i.e., stressing the transmission question (e.i.. how much information was obtained?), rather than construction question (what strategy was used in retrieving the information?).

Information is studied from the viewpoint of an actor (inquirer) rather than an observer (librarian). It is the user who closes the situational gap between the information known and sought by him, according to his own experiences.

The sense-making approach involves the way questions are formulated and data collected and analyzed. It is both quantitative and qualitative. It "assumes that there is something systematic about individual behavior to be found by pursuing process orientation. In this way, then, sense-making casts itself as a systematic qualitative research, an approach with qualitative sensitivity which is amenable to the systematic power of quantitative analysis." (p. 81) It is based on "the assumption that human use of information and information system is qualitative, not monolithic. This implements the discontinuity assumption. Information is not seen as something that describes a given reality in an absolute and potentially accurate way . . . rather, information is constructed. The act of constructing and the act of using that which is constructed is a qualitative act." (Ibid.)

DERVIN, BRENDA and PATRICIA DEWDNEY, 1986:

The authors discuss new reference interview technique. "Neutral questioning is a strategy for asking questions during interviews where the professional needs to find out what the user or client really wants. The strategy was developed deductively from the core theoretical premises of sense-making and was tested inductively," (p.508) as a subset of open questioning.

DERVIN, BRENDA and MELVIN J. VOIGHT, 1984:

Various aspects of communication science discussed in separate chapters include: (a) an emerging pattern of isolation and ethnocentrism is responsible for noncommunication in communication science; (b) paradoxes of self-contradictory conclusions in information inquiry lead to a new information search; (c) communication technology's holistic relationships to cause-effect of social and political influences ought to be studied in a given situational context; (d) retrieval of information is based on inductive prediction of relevance of searched documents; (e) heuristics methods, interpretations, and ethnographic context provide bases for the theory of communication science, which at this point is still in search of a discipline.

Glyn Harmon (1980) in his review of the book elaborates on the above assumptions, concluding that "the communication science has yet to evolve or develop a singular paradigm." (p.100) It is described as a meta-discipline, and "the perceived ferment and chaos of the communication science are earmarks of an evolutionary phase toward disciplinary or metadisciplinary development." (Ibid.)

DESROCHERS EDMOND E., 1961:

Preservation, acquisition, organization and effective use of communication media, promotion of reading and supply of information, are all descriptions of library practice, not its philosophy. Philosophy answers the question 'Why?' in terms of library purposes which are different for different kinds of libraries, and hence formulating different philosophies.

Common to all libraries is a focus on individual (close to philosophy of education) and on society (close to social philosophy). Unique to librarianship are: (a) art of service, advising and guidance, (b) organization and dissemination of knowledge and its sources, (c) evaluation of knowledge for acquisition and use and (d) scholarship integrating scientific, technological and humanistic (motivation) elements

DeWESSE. LEMUEL CAROLL, 1970:

Librarians handle, create and destroy, select, evaluate and give priority to information. The ALA code of ethics is not related to ethics but to administrative and personnel policies, advocating avoidance of change, although tension in change "indicates values, commitment, and a moral struggle." (p. 548) Moral obligation of a librarian includes education of their client, and making moral decisions about 'the good' reading. Librarians must develop a consciousness of themselves, not as amoral individual making moral decisions, pretending that they do not make them, but as conscious representatives of values that society should have.

DEWEY. MELVIL. 1851-1931

As a strong pragmatist, Dewey promoted uniform library practice. He was considered by Shera not so much a scholar but an educator, his philosophical approach, according to Broadfield, was based on citizen-worship, group-mindedness and pragmatism. Foster pointed to Dewey's contribution to the theory of classification by developing its own classificatory system. In 1887 Dewey introduced the first library school in the world at Columbia University.

---- 1898:

On the assumption that 'knowledge is power, Dewey considered the library not merely a collection of books but also as an active and essential source in the education justifying full state support.

---- 1876:

Librarianship is a profession. The concept changed from that of a librarian as a book keeper to his role in education, selecting the best books for the community and encouraging their reading.

"The time was when a library was very like a museum, and a librarian was a mouser in musty books, and visitors looked with curious eyes at ancient tomes and manuscripts. The time is when a library is a school, and the librarian is in the highest sense a teacher, and the visitor is a reader among the books as a workman among his tools." (Reprinted in Landmarks of Library literature, 1876-1976, 1976, p.23)

---- 1898:

Dewey stressed the importance of good reading and state support of public libraries. The library is considered as a community center for cultural activities and is responsible for selection of quality material and continuing education.

DICK, A.L., 1991:

The author reviews epistemological bases for research in library and information science. Butler called for the application of scientific method combined with the humanistic approach to the philosophy of librarianship. However, he warned about the 'scientific delusion' if librarianship is exclusively scientific, based only on positivistic research methodology. The exclusively positivistic approach is criticized by writers such as an epistemological dualist Wright, who argued for the precedence of metaphysical, rational over empirical, physical approach in the interpretation of ultimate reality. Positivistic epistemology is also criticized by Harris for its value-neutral, apolitical stand. On the other hand, writers like Bergen and Schrader considers positivistic approach as one of many possible research methodologies, preferring a 'holistic' approach that stresses interrelationships between different views. "Within the unity of its immaterial realities and physical instruments, the fate of positivism as a research approach in library and information science appears to be linked to the perception of the balance that will benefit professional development best." (p. 237)

---- 1993:

The essay analyzes positivist, constructivist and critical approaches to the research in library and information science.

Positivist methodology, the most popular approach in addressing technical issues in library and information science, consists of experimental, ex-post facto and descriptive empirical methods of testing a hypothesis. Its philosophy is discussed in detail in Dick's previous essay (1991).

Constructivism, focusing at the reconstructioning processes of reality in the human mind's was already implied in Butler's interpretation of reality as a subjective reconstruction of an objective unified cosmos. Writers that subscribe primarily to basic constructivist propositions are cognitivists (Belkin, 1990; De Mey, 1980; Ellis, 1992), focusing on phenomenology and hermeneutics (Benediktsson, 1989, Bennett, 1988), symbolic interactionism (Wright, 1986), reader-oriented approach (De Beer, 1991); Neill, 1985; Nitecki, 1986) and dialectical approaches (Bergen, 1985; Nitecki, 1985)." (p.57)

Critical theory stressed the influence of ideology on experience, considered politically. It includes "neo-marxist, materialist, feminist, Freireist, participatory, new paradigm, emancipatory and praxis-oriented methods . . . to 'raise people (the oppressed) to a level of 'true consciousness." (p.58) The assumptions of this approach are based on (a) ontological view of critical realism that reality exists but cannot be fully apprehended, (b) epistemological subjectivism assuming that values mediate inquiry, and (c) belief in changeability of human nature, expressed by the metaphors of transformation and emancipation. (Ibid.)

This approach was discussed in library literature among others by Harris, Baum, Neill, Pircher and Frohmann.

Dick recognizes the validity of each of the above approaches and calls for holistic perspectives "as one eminently suited to the disciplinary character of library and information science." (p. 59) It "suggests an interconnectedness of seemingly divergent methods . . . [which] constitute substantively different approaches to inquiry but conform to well-established criteria for validation from objectively constructed frames of reference." (Ibid.)

DICKINSON, DENNIS. W., 1978:

Participative management popular in US since 1960, followed the emergence of a new library staff who are more politically aware, socially and economically demanding and more difficult to manage by traditional methods. Although the concept was first mentioned by Danton (1934a), it is still an ill defined term, meaning everything from staff input to the management by plebiscite. The issue really is that of power sharing with only partial sharing of responsibilities.

Theory Y proposes a middle course between autocracy and anarchy based on the premise that most staff is motivated and responsible. The decision-making are shared with staff, carefully balancing employee freedom with accountability.

However, use of committees as a group-problem solving approach is costly and it results in mediocre decisions that avoid confrontation and defuse responsibilities by making decisions with impunity. The library as a complex logistic system requires coordination and management of the whole organization through hierarchical authority structure, the very antitheses of collegiality.

There is a need to differentiate what is necessary from what is merely possible, leading to a periodical review and revision of library total structure. However, changes cannot be easily implemented by participative management because of the tendency to protect own autonomy, security and staff ascribed status.

In order not to isolate director from the staff, library bureaucracy and hierarchical structure should be kept to the minimum. But a library cannot be run singlehandedly, no one can know all necessary details of operation, thus there is a need for some consultation and delegation of authority.

Participative management should not mean exclusively either administrative abdication of responsibility or maintenance of a dictatorial, autocratic management style.

DIENER, RICHARD A.V., 1989:

Information science is the science that study information. Information is (a) an entity free of matter or energy, (b) it exists in the human and societal domain of interaction, and (c) it can be reproduced, shared without loss, enhanced through use, has a life cycle, is ephemeral, must be processed to exist either as a subjective mind's image or as an objective language, and it has a relative truth value.

Information science should be based on a theory and methodology of its own rather than on a management theory that is not well understood.

DILL, WILLIAM R., 1962:

Environment is the surrounding of an organization, the climate in which the organization functions; its properties are however very complex, its size, diversity and degree of stability vary.

Environment is studied as information available to the organization. The focus is only on those elements of information that bear directly on goal setting and their attainment.

The information serves: (a) as a trigger of action, (b) as a source of information about the goals, their achievements and constraints, and (c) as a means for evaluations and judgements concerning organizational performance.

Individuals and organizations are conceptualized as information processing systems, and the environment is simulated by computers in order to study its impact on them.

DIMOCK, MARSHALL, E., 1938:

"The library should accommodate those who know what they want, and . . . render service, plus guidance and encouragement to those who need encouragement. In its collaborative work with educational institutions and adult educational movements the library role deserves to be called nothing short of promotional . . . an aggressive educational philosophy is the best. If the objectives can be obtained by the institution's serving in an ancillary position, well and good; if not, then librarians should build their organizations for aggressive action." (pp. 72-73)

"Two principal theories of organization are struggling for mastery in the library field . . . the subject-matter theory of basic organization [for the subject-matter departments] . . . and the functional theory . . . for the circulation and reference departments." (p. 82)

"The best general theory of organization may be called 'functional integration' [in which] functional specialization is combined with the direct authority relationships." (p. 88)

DITZION, SIDNEY, 1939:

"When we examine the whole body of evidence relating to the social nexus between the working class and the public library, we see that humanitarian efforts constitute but a particularized form of pleading for reading matter for the masses. If we remove the emotional content from this method of justifying the existence and extension of a public library, we have left a movement for the education of that part of the extra-school population that could not afford to buy its own books; we have a desire on the part of people in all walks of life to provide for the cultural advancement and vocational improvement." (pp. 170-171).

The social background in the development of a public library includes: "(1) education for intelligent participation in the mechanics of our political democracy, (2) the perfectibility of man and his social relationships by means of the broadest possible diffusion of knowledge, (3) the undercurrent of fear in some quarters of possible violence and disorder that might result from discontent plus ignorance, (4) the attitudes of organized labor toward mass education through the medium of books and reading." (p.184)

---- 1943:

J. N. Larned was a librarian (1877-97), who he expressed a progressive philosophy of librarianship, based on a tridimensional view of cultural development: material advancement, practical acquisition of knowledge and spiritual advocacy of 'good' literature.

The public library responsibility was "to counteract the factionalism of public life and the flippancy of the press with the eclecticism and seriousness of its book collections." (p.118)

Education was not considered merely as a utilitarian means for political, vocational or professional objectives, but as an absolute good, explaining librarians new missionary zeal in the diffusion of knowledge. "The position of the library is that of a ubiquitous auxiliary agency which enriches the effectiveness of all contributions to community life." (p. 119)

Librarians were expected to advance the principle of political economy, based not on equality but equity gained by a superior intellect without disadvantaging others.

Larned distinguished between 'good' and 'bad' novels, suggesting that librarians (to avoid censorship) ought to follow the consensus of literary judgment based on the 'art as a moral conception', objecting to the notion of 'art for art's sake' as an excuse for artistic vulgarity. He also disagreed with the notion that any reading is better than none, since cheap novels lead to an addiction and mental debility. 'Questionable books should be purchased only after insistent public pressure . . . with a warning statement as to their general character." (p.121)

Larned reflected a consistent pattern in American life of "a liberal democrats whose eyes are wide open to the underlying weakness of his generation but who is prevented by ethical and moral optimism from acting on the complete logic of his thinking." (p. 131)

---- 1947: .

In the past library historians were either fact-gatherers, chroniclers or propagandizers of the profession. The new library history began in the New Deal period sharpening the social consciousness, adding to the study of individual libraries and librarians the studies of economic, political and social factors. The dynamics of group participation was the context of historical thinking at Graduate Library School at Chicago, and in the Library Quarterly. The public library was considered not as an insulated institution, but as an integrated part of American life. Some were trying to apply library history to the sociological models without good understanding of history.

From the beginning American focus was on socialization of books and reading through private, semi-private and public institutions, with leading local people as movers and 'causers' of library development, responding to social-cultural pressures, and as catalysts and accelerators of library development. In general librarians shared with sociologists the preference for studying aggregates of people rather than individual.

One of the 1930s hypotheses maintained that the impetus for public library movement comes from working class needs: this was a motivation of library founders to avoid social disharmony; although the working class itself showed little interest in libraries.

The library profession adhered to the abstract principles of democracy and support of status quo (library was placed alongside professions such as sanitation or hospitals), satisfying a minimum social service demanded by democracy. The conflict between the support of wealthy classes and the voting power of the population resulted in libraries' neutral political position.

The library role in democracy is seen as a meeting ground for poor and rich voting participation: an ignorant voter is considered a treat to democracy, hence the public library is perceived as a substitute for the townhall in political education.

DOLLEN, CHARLES, 1959:

The library is defined by a catholic priest as an orderly collection of books available for use. Nonbook material is justified in special libraries only. Librarianship as a profession ought to be dedicated to truth, by servicing man through books.

The subject-matter of librarianship are books that preserve ideas; its form is an orderly, logically organized activities, its purpose (i.e., a final cause an autonomous entity, a moral unit) is to make books available to its patrons.

"A philosophy of librarianship is needed. It must be founded upon reason, with a view to purpose and method, without an appeal to jargon. Stated simply, it will first of all teach the librarian the greatness of his life of service. Definitely it must contain conclusions about the book, the library, and non-book materials, plus the note of profession, and the position of that profession." (p. 465)

DONOHEW, LEWIS and TIPTON LEONARD. 1973:

Positive, negative and unrewarded lifelong experiences are stored in an individual's memory and influence formulation of three aspects in the individual's image of reality: (1) goals, beliefs, knowledge, (2) self-images and (3) plans for copying with environment, the information seeking process. This cluster of cognitive elements comprises Boulding's concept of an individual's image of reality, his 'frame of references'.

Goals, beliefs and knowledge include concepts, ideas, objects, each further subdivided into 'attributes', i.e., characteristics or qualities of these objects. In storing information one arranges it into hierarchical order of attributes (prominence, the rank on the continuum, valence and degree of preference).

The concept of self includes ability to cope with environment, while information-handling sets, the process of selecting and processing information that depends on people's styles of open or close mind attitud

Two strategies are followed in acquiring information: (1) narrow focused approach in which individual focuses first on one source of information and adds others as he comes across them. (e.g., by starting with one key article, and building the sources from footnotes and bibliography), and (2) broad-focused strategy in which one first identifies potential sources of information, and then selects the best source, organizing other information around it (e.g., first compiling records in a given subject, selecting specific titles later).

The author's model consists of a flow chart describing options individual has in developing his tripartite image of reality. The steps involve attention to stimuli (color, shape etc.), their cognitive content (as it relates to one's image of reality); assessment of a particular situation, prior experiences, information style in approach to information gathering, priority, risk involved, information needs, preferences, potential sources and feedback. The result of such a strategy may lead to a revision of an individual searcher's reality image.

DONOHUE, JOSEPH C., 1987:

The information profession is discussed in terms of (a) three distinct occupations: librarianship, information systems and information resource management, operating in (b) three different contexts: professional, disciplinary and educational, considered from three viewpoints: turf (economic), abstraction (philosophical) and function (operational). Information science addresses the practical issues of applying modern technology to an information explosion.

DOSA, MARTA L., 1974:

As pointed out by D.Kaser (1974) this book is not about the political environment of the libraries, but about professional life and milieu of a prominent German librarian, Georg Leyh. In essence, his philosophy "was that libraries have a high humanistic and scholarly purpose that can and must be keep aloof of ideological and political issues." (D.Kaser, 1974, p.460)

DOW, JOHN T., 1977:

Metatheory assures that a right solution is developed for a right problem. In information science which is a multi-disciplinary approach, metatheory provides means for interrelating components of these disciplines. The functions of metatheory considered as a 'practice theory' are: (a) to facilitate a creation of an appropriate specific theory, (b) to assists in delivering expected products of such theories, and (c) to address idiosyncrasies of each component discipline.

"The prescriptive metatheoretical statement is stated as follows: Information scientists should refer all statements about information to one of the three distinct levels: casual, macroscopic, or microscopic. A theory including statements at more than one level must also include rules of transformation from level to level." (p. 324)

Causal level is non-analytical, with little discrimination between concepts: it is a descriptive approach based on naive realism. Macroscopic level is analytical, with optimal discrimination for research: it is a pragmatic approach based on the philosophy of empiricism. Microscopic level is an extremely analytical, overly practical explanation based on philosophical rationalism.

"Define information casually and it will do well as far as it goes. Take a pragmatic, macroscopic approach, define information operationally, and it is useful and manageable. Try to analyze it further and you are faced with microscopic states and processes, but nothing that can be pointed to as information." (p. 330)

Some rules of the metatheory include (a) decision as to which of the above levels best fits a particular theory and (b) development of linking method between the levels. The theory may be satisfactorily formulated at any level, however the relationships between the levels are that of correspondence not of equivalence.

DOWNS, M.W., 1969:

Protestant ethics, emerging from Reformation, encouraged reading as a virtuous act of self-improvement. By 1853 there were over 1075 subscription and other kinds of libraries. The two conferences in 1853 and 1876 started library movement; no philosophical statements were made at either of the conferences.

but individual views were expressed, indicating the emergence of principle guidelines for library development.

The library was at first an adjunct to the authoritarian ruler. In Middle Ages wealth was not actively sought, life on earth was considered transitory with monasteries as sanctuaries of books. Gradual emergence of the nationalism in Europe and encouragement of learning by the church created the concept of roving scholars, moving around monastery libraries. In Renaissance, the focus gradually shifted to individuals; Luther's proclamation in 1517 marked the beginning of Reformation encouraging the use of one's own talents, leading to wealth acquisition, self-reliance and reading.

At 1853 library conference a call was made for a diffusion of knowledge through good books and enlarged public access to them; in 1876 Dewey proclaimed the importance of 'the best reading for the greatest number at the least cost' : books were considered valuable sources of information, for recreational reading and adult education. Since 1876 librarians focused directing on a reader and proper sources by acquiring and organizing collections for easy use, by developing interlibrary loans, providing reference and encouraging self-help.

Philosophy is defined as a 'search for the underlying causes and principles of reality' useful when a choice has to be made between alternatives. The concept of library philosophy is recent, based on a correlation between economics, market system, a profit motif and the growth of libraries.

Writings in philosophy of librarianship started with Gabriel Naude, Martin Schrettinger and F.A. Eberts. The American library conference in 1876 called for innovations, service, adult education and entertainment. The concept of 'knowing your community', recognized all segments of the society, and ALA Bill of Rights (1939) and the Freedom to Read statement (1953) becoming official philosophical principles. Jewett (1848) called for financial support of libraries by public taxation. (1851).

DRAKE, M.A., 1977:

The traditional image of a librarian includes: (1) knowledge of a specific field, (2) prescribed a course of training (no apprenticeship), (3) sale of services (not a product), and (4) purchase of information considered by a client not as a necessity but a choice.

Recent shift from book worshiping to information services, and from warehouse maintenance to information provision, creates a conflict between the goals of librarians and of a library as an organization.

DuBOIS, P.Z. 1979:

Humanistic tradition views librarianship not so much as a profession but as a calling, (similar to the calling of medical doctor), by dedication to scholarship, service and passion for books. New technology should free librarians to do things that only human can do, and not to confuse information with knowledge and wisdom. There is a mindless information science that sees goals as processing of data.

DUCKETT, R.J., 1986:

The author distinguishes between popular (inspirational) and academic (analytical) philosophies, with strong preference for the later.

This view is criticized by S. A., Combe for making an unrealistic distinction between popular and professional philosophies, instead of differentiating between good and bad philosophies. P. Ellway objects to Duckett's preference for academic philosophies, which is contrary to the trend of moving away from linguistic analysis and focusing instead on problems of existence and conduct relevant to everyday experiences. Both critics accuse Duckett for his elitist preferences.

DUDLEY, MIMI, 1983:

Library instruction, bibliographic instruction and user education are all reference services. The concept of reference as an assistance to users of libraries first appeared in Library Journal in 1891. In 1870's personal assistance to the reader was made available. in 1877 the access to the resources themselves was restricted to the research. In 1884 Dewey introduced the first reference department at Columbia University. In the last quarter of the 20th century library instruction was formalized as a separate function, establishing a separate unit within ALA.

The philosophy of bibliographic instruction asks the questions: why, when, where and who of library instructions. The answer: When? Now, Always, Anytime. Where? Anyplace. Every Place. Who? Your users and your colleagues. Why? Because you are a librarian." (p.63)

DU MONT, ROSEMARY RUHIG, 1982:

It is wrong to assume that with a sufficient amount of information any information need can be fulfilled. Information is not just a material resource but reflects level of understanding and constraint of individuals in their random search for information.

DUNBAR, GEOFFREY, 1972:

Quotes William James distinction between a life and dead hypothesis about beliefs. The life hypotheses appeal to the person they are addressed, the dead do not.

D. Berninghausen's hypotheses makes a distinction between librarians non-involvement on professional issues and their interests as citizens.

Social Responsibilities Round Table members take an opposite view, claiming that this is a too restrictive, dead hypothesis. According to them, the nature of an individual and his relationships and responsibilities to the society require that the librarians are directly involved in fundamental social issues.

The author maintains that the Berninghausen hypothesis reflects the identity-through-vocation syndrome of 1940s to 1960s; while the identity-through social responsibility is an unavoidable next stage in the evolutionary development of librarians social consciousness. However, both approaches can be seen as moving from the view of the world 'as it is' today to the ideal world that 'might be."

DUNCAN, JOSEPH W. 1988:

There is a lack of differentiation between 'information age' and 'information industry'. US economy changed from agricultural through manufacturing to present service domination, but all three areas of service are still important.

Information industry is characterized by maintenance of bibliographic databases, redistribution of information, aggregation of available information, collection, analyzes and distribution of proprietary information, provision of critical support in computer manufacture and development of software and telecommunication.

Functionally, the essence of management of information is difficult to define because value of information is subjective, situation- and time- dependent, with difficulties to measure 'values added' in the decision environment. (Value added includes the contribution of capital equipment required, wages, salaries, profits and other costs.)

Value added measurements in national income accounts do not evaluate the enhanced productivity, evident in an individual situation. It is clear however, that information activities do enhance in general the ability to undertake more tangible economic activities.

DUNKIN, P.S. (1973):

The author describes major 'revolution' in librarianship as it is illustrated by changes in cataloging rules. The legalistic theory of cataloging insists that every aspect of cataloging must have rules, hence attempts to include issues of taste and judgment, obscure the principles of cataloging.

In 1876 Cutter in his search for principles of cataloging, developed rules adjusted to the needs of different kinds of libraries. Jewett in 1852 stated that nothing in cataloging should be left to an individual's judgment. Osborn maintained that cataloging is an art based on principles and simplifications. Lubetzky also objected to detailed cataloging practice; in his review of rules for entry and description, he emphasized cataloging economy, with preference always given to clarity rather than simplicity.

To avoid costs of recataloging, Library of Congress and ARL developed a compromise, bringing together rules of 'ALA Red Book' and LC 'Green Book', by introducing the principle of superimposition (new rules applying to new additions and personal and corporate entries established for the first time.) At the same time LC and ARL pushed for automation.

DUNNETT, WALTER, 1984:

There are two kinds of reading: (1) easy reading, easily comprehended for information, and (2) challenging reading requiring an effort to understand.

M.J. Adler proposed three types of reading: (1) "Learn to read structurally or analytically, moving from the whole to the parts, (2) Learn to read interpretatively or synthetically, moving from the parts to the whole, and (3) Learn to read critically, evaluating what you read, judging what the author is saying." (p. 120)

One should learn how to understand what the author intended. Material read should be enjoyed and used for personal, social, professional or vocational purposes; each reading contributes to the development of a person.

DURELL, THOMAS J., 1938:

Rural schools cannot fulfil their obligations without a county library. The librarian knows better the reading needs of children in her community than the local teacher. The two main functions of a county library are to provide material for information and develop in children a love of books by exposing them to books and by providing reading group experience.

DURR, W.T., 1988:

The current flow of information from sources to users does not obliterate but revolutionize the roles of the librarians, curators, record managers and archivists. It represents communication among the institutions, an explosion in hardware and an implosion in the software, creating chaos in the archival world which requires archivists to pay more attention to the theory and functions of institutions. The information revolution gives abundant information but also creates a hazard in preservation.

Information science is defined as the discipline that observes, experiments with, and defines the construction of automated systems,and that retrieve information generated and organized by bureaucracies for storage and distribution to selected audiences.

It helps answering the questions: What are we doing? How are we doing it? An archival software developer asks: How do we control records in relation to their management and retrieval by subject content? Information is the key intellectual property, the common denominator, used by a three-tier system: the repository management, the software management and user management systems. 'Management of information is the key to what professional do - they manage information about records in order to manage records." (p.599)

DUTTON, J., 1988:

Often repeated themes in library literature are: (1) censorship and intellectual freedom with intend to save us from various evils, (2) cult of computers, forecasting demise of traditional librarianship, (3) cult of social activists, demanding library social relevance to be accepted in political order, (4) professional management of libraries by use of scientific management. (5) library place in information society as partners of computers. (6) library education with little if any understanding of the theoretical bases of librarianship and (7) theme of books, bibliotherapy, cultural experience, personal growth, and recreation. Our work should relate to what we do best, provide cultural memory and experience through books.

DYCKMAN, JOHN W., 1964:

Expansion of higher education, competes with research and reading functions of public libraries; technology diminishes the importance of book circulation, television affected reading habits, paperbacks weaken the importance of library collections and the storehouse function is shifting to federal and university archives.

The importance of the public library remains in the informal education, leisure reading and primarily as the centers for basic book resources, reference, reproduction and preservation.

DYER, CHRISTOPHER, 1969:

Philosophy of school librarianship stresses the choice of reading by individual reader. Writing and reading were desirable when no other ways of preserving talk were available. Today these skills may not be as absolute as in the past, and dependence on reading alone in school programs may not be enough.

Needs of individual students consist of: (1) access to facts, each individual determining what kinds of facts he needs; (2) linguistic need to communicate but also to think, requires a variety of language levels. (3) psychological, personal needs for developing imagination through fiction, (4) aesthetic satisfaction, which depends on individual choices; it is also highly personal, and refers to esthetic standards and culture.

Freedom is a philosophical paradox. Primitive man would be free theoretically, but he was actually bound by the theoretical freedom of all other species. 'I am free to be an individual, but my freedom is circumscribed by every other individual's freedom'. Hence the school library must address the individual's need for satisfaction in the context of the larger group.

Similarly the concept of ethical goodness in the library is relevant not only in the ethical or esthetic sense of 'good' books but also in the attitude that justifies a library, in a sense of the student having a freedom to read; it is not an absolute goodness of reading as such.

- E -

EATON, ANDREW J., 1971:

One of the most important developments in librarianship in the 1960s was the focus on research in librarianship. It falls into eight categories: (1) backgrounds, organization and administration, (2) technical processes, (3) resources, (4) personnel and training, (5) reader services, (6) international, (7) comparative and foreign, and (8) methods of research.

Background includes library philosophy, goals, history, books, publishing and the social aspects of librarianship.

The evaluation of the value of research in the field varied: P. Ennis considered it as a "noncumulative, fragmentary, generally weak and relentlessly oriented to immediate practice . . . others believed that basic research is what the profession needs most, and that preoccupation with immediate concerns will not yield solutions to long-range problems [and that dissertations] should be regarded not so much as contributions to knowledge, [but as] instruments for training in research methods." (pp. 355-356)

One objective of research in librarianship ought to be "better understanding of the theoretical foundations of library work and of the storage, organization, and communication of knowledge." (p. 359)

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ECCLES, J.C., 1983:

We are born with the well-formed brain, and we learn gradually to use it through our first months of life, and by practicing language we related to the outside world. The language of babies at first is pragmatic: they ask for desirables (foot, comfort), with time they start using more specific language, (what is this for?) and through it finding their way into the world, and becoming cultured human being.

Popper's physical, real World 1 is the whole material world (the entire cosmos with all its matter and energy, including human brain). World 2 is the spiritual, conscious world of people's subjective experiences (all our thoughts, memories, ideas, imagining, creativity). World 3 is the world of civilized culture, of whole human creativity. There is an interaction between these worlds (we grow from World 1, through World 2 continuously, throughout our entire life into World 3).

People do not only act, but are also responsible for their activities; hence a materialistic explanation, limited to World 1 is not enough. Eccles proposes an alternative hypothesis of dualistic interaction (also known as psychophysical interactionism), a commonsense view that people are composed of two distinct and separate entities: (a) World 1 of physical realities, human brain and the body it controls, and (b) the nonmaterial World 2, the self-conscious mind, the psyche that constitutes the self. The self-conscious mind and the nonconscious brain interacts with each other in both directions as a flow of information but not as a flow of energy. Brain is an instrument, our personal computer.

EDELMAN, HENDRIK, 1976:

"With a smaller percentage of material available locally and less emphasis on creating bibliographic records, the burden of interpreting published knowledge is on the librarian." (p.56) This results in a "shift away from collection building in favor of sustained or improved direct user services . . . There will be an increased emphasis on the librarian as a deliver of information, rather than as a custodian of the knowledge storehouse." (Ibid.)

EDWARDS, RALPH, M., 1975:

The distinction is made between the function of librarian as a manager and as a professional. "Failure to clarify the differences between these two functions has hindered the development of a genuine profession of librarianship . . . [by] limiting conception of management, rooted only in bureaucratic models of library organization." (p.150) "What is called for is a broader vision of both the library profession and library management." (Ibid.)

The author argues for a position of library management specialists, librarians who "could proceed to meet their responsibilities, which is to develop and maintain the most effective organizational support for librarians who provide the professional services necessary for meeting society's informational needs." (p.160)

EGAN. MARGARET. 1955:

The library is considered as a social institution in transition. its development is determined by its social environment. Three types of library organization are discussed: (1) library organization emerging from the changing social structure, (2) librarians' professional organization, and (3) personnel organization within an individual library.

In late 19th and early 20th centuries social institutions were interpreted in terms of Spencerian view as a part of the total social organization. with a local community playing an important. independent cultural role. Changes in social institutions are compared to biological evolution. in which environment adapts to changing conditions. Librarianship must follow the same process of adaptation.

EGAN. MARGARET. E. and others. 1956:

Librarianship is concerned with an entire range of knowledge, it is a mediating service between subject and bibliographic knowledge, a form of intellectual engineering. Its theory ought to be developed within the discipline because a search for a theoretical foundation in other fields has resulted in narrowing the concepts of library functions.

There are many histories of particular libraries but no history of librarianship; there is a need for understanding what librarians have undertaken to do. in the context of changing needs of the society.

The function of the library is "to maximize the effective social utilization of the graphic records of civilization." (p. 204) The library is a part of communication system, and any theory of librarianship must be related to that system. It provides an interrogative communicatioñ: the patron requests a given document. the librarian must find it. This is contrasted with the mass declarative communication. in which a communicator chooses the message and communicate it to the audience. whether the audience comprehends it or not.

EGGLETON, RICHARD. 1979:

Usually. conflicts in librarianship are between the innovators. committed to the profession rather than the institution. and the ritualists. focusing on the organization rather than on professional issues. Confrontation is considered to be the most productive solution because it brings up new approaches. while compromise may merely postpone the conflict.

Professional orientation stresses autonomy. service to the client and loyalty to the professional group; the bureaucratic approach focuses on adherence to organizational rules, regulations and procedures. services and loyalty to the organization.

EISENBERG, ALEX, 1982:

Information is accepted as the basis of all decisions and all new ideas; it should underline the work and philosophy of information professionals. The new philosophy must be created on a worldwide scale.

"In our field we ought to think in terms of knowledge transfer and information distribution on a large scale - and the vehicle for this process is electronic communication of information. The end-result is a global information system." (p.4)

EISENBERG, M.B., 1988:

The paper reviews the state-of-the-art of library and information science, by listing eighteen major trends, which can be grouped in three categories: (1) impact of computer technology on library operations and research, (2) increased interest in library management and (3) concern about library professional status, and education.

EISENSTEIN, ELIZABETH, L., 1968:

Social changes started with an invisible revolution in the late fifteenth century, created by the introduction of the printing machine, which changed the mode of production, communication and shift from scribal to typographical culture. The single text was replaced by edited first editions and their copies. The supply of books shifted from retail trade to a wholesale industry. The reading habit changed by distinguishing between learning from books and learning by reading, followed by increased learning by doing rather than by reading. The era of a glossary and comments was replaced by cross referencing between books, which created new combination among old concepts leading to the emergence of new ideas.

Production standards lead to new reference guides, with scholar-printer serving as an indexer-abridger-lexicohrapher-chronicler, with printers' workshop becoming the center of erudition in the sixteenth century. Editing, codifying and cataloging data followed, responding to the call for reader convenience. The preservation made possible an accumulation of fixed records with ideas leading to new knowledge. Increased access to books, augmented feedback from different sources, and consequently expanded cultural diffusion. But the most important impact of printing presses was the creation of new reading public. It changed from a silent and solitary, often unknown to each other individuals linked by books, to expanded interacting public. Novel reading increased empathy, humanitarian movements and sensitivity to a variety of tactile and sensory stimuli. (p.54-5)

The method of duplicating handwriting utilized five centuries ago changed, quoting Bacon "'the appearance and state of the whole world [bringing] the most radical transformation in the conditions of intellectual life'" (p. 56) "Typographical fixity is a basic prerequisite for the rapid advancement of learning." (p.17)

EKECRANTZ, JAN. 1987:

Definitions of information society claim either its reproductive, or revolutionary state. The static approach questions replacement of one theory of value (labor) by another (information). The revolutionary theory assumes that knowledge and information are the new types of resources.

Defining information society in terms of people dealing with information is not enough, because "it is possible to operate on knowledge, without possessing that knowledge in the cognitive sense." (p. 81) The quantification of production and circulation says nothing about the content of information value. The distinction between the creation and communication of knowledge is philosophically questionable; information that is not communicated does not raise the level of information society.

The sociology of knowledge concentrates on 'where' and 'when' of knowledge; mass media research focuses primarily on 'how', less on 'where' and very little on 'what'. The concept of information 'gap' (between haves and haves not) is descriptive, and focuses on quantitative differences at the expense of qualitative 'who knows what'. Information changed the concept of poverty, by replacing print illiteracy by computer illiteracy.

Neither communication revolution nor new information societies are the products of social revolutions: "the fundamental division of labor in society, and the social classes that constitute it, have always consisted of a social division of knowledge." (p. 86)

Information cannot be valued on its own, autonomously without specific reference to the relevant information environment: it often includes noninformation, misinformation, disinformation, or cognitive distortion. "The personal value of a particular resource is often derived from its relative absence." (p.88) "The important thing is not to know much, but more." (Ibid.)

Regis Debray's 'medialogy' (a) points out to "the inverse ration between the informational value of a message and its communicability": (b) it states that "the economy of reason makes reason anti-economic", [while] "the mass media ensure the socialization of private stupidity," and (c) "the accuracy of information becomes more and more improbable as the sphere informed is extended." (p.89) The concept of media becomes more important than their content.

The knowledge considered as economic resources, conductivity to power, economic power or as the result of concentrated power, is either an attribute of power or it implies it.

The traditional reformists philosophy of colonialism assumes a flow of information from informed elite to less informed general public, thus increasing its resources. In reality, however, the diffusion of knowledge does not lead to knowledge-power but rather to polarization between social groups, creating the instrumental power over people. Power relationship is a relative term applying to knowledge as well as to its communication, accumulation and displacement of records.

ELLIS. DAVID. 1984:

Research in information retrieval should be refocused from the information retrieval system itself to the user's interaction with information sources.

Relating information retrieval research too closely to physical science, technology and engineering models results in the use of relevance as a performance criterion by substituting "a measurable phenomenon, relevance judgment as employed in laboratory test, for an unmeasurable one." (p. 29) In real life, the focus is on determination of significance of relationships between the laboratory tests and the performance of operational systems, with information retrieval models unable to explain why or how individuals seek information, asserting that "there is a necessary inverse relationship between precision and recall . . . [confused with] a necessary inverse relationship between the ability to determine precision and recall accurately." (p. 33)

The author concludes that "information retrieval research has more to learn from user studies and from . . . research in the field of artificial intelligence than from aeronautics or high-energy physics." (p.36) "Information retrieval systems ought to be designed around the concept of exploratory capability." (Ibid.)

ELMAN. STANLEY A., 1976:

Humanization of library environment is proposed at the pragmatic. working level. Information science is interdisciplinary sharing with other disciplines information, its generation, transformation, communication, storage, retrieval and use, both on the mechanistic and humanistic levels. Humanization of information science (a) relates to assisting users in defining their information needs, (b) not confusing computers, book collections and buildings with libraries and their functions to provide needed services to the community.

The computer technology is a historical accident rather than a scientific organizing principle. There is a need for more attention paid to social, cultural and spiritual aspects of communication. Library effectiveness is not synonymous with efficient library collection management.

The applications of statistical, mathematical, sociological and computerized methods of research are important contributions of system analysts, but only if not exaggerated.

The main goal of information science and librarianship is to bring together the information seeker and the information sought, by relating the two approaches closer to humanistic concern.

EMERY, RICHARD, 1971:

On an elementary level philosophy is a theory of a subject matter taken as a whole, with principles binding together concepts such as meaning, value and/or function.

"Librarianship, with its more limited areas of activity, conception and its study, is better viewed in terms of theory or theoretical principles than philosophy." (p. 20) Librarians perform secondary tasks, relating more to the communication of knowledge than to its creation or application.

"The fact that a basic philosophy cannot exist for a secondary activity such as librarianship has meant that many writers, supposedly discussing the philosophy of librarianship, have in fact been directing their attention to purpose [Broadfield], sets of professional ideals or guides for conduct [Foskett], or function [Nitecki]." (p. 22) The same criticism can be also extended to McClellan's purposes and obligations, Ranganathan combining purpose and function, or Benge's dilemma 'for what purpose'.

The author feels that other statements are also of little help, e.g. J.D.Cowley's dictum, repeated by Foskett, 'no politics, no religion, no morals' or Butler's call for helping individual in his search for information. All such statements indicate limits of library service but no solution to library problems such as censorship.

"Function explains purposeful action, that is function is usually thought of in terms of activity by which purposes are fulfilled." (p.24) Library functions are means toward the ends of library purposes (collection, organization, preservation, and dissemination of library materials), that is, library functions are related directly to library purposes. Thus a combined theoretical and empirical approach to librarianship and its problems rather than to the library philosophy, purposes and function, simplifies the formulation of library goals and the description of its realistic functional activities.

ENGLE, MICHAEL O., 1986:

"The values inherent in a conscious philosophy provide direction for the actions and decisions of daily work and the formulation of long-term goals and objectives." (p.30) "A basic philosophical principle is that raising of serious questions is exceedingly important, even if no answers are forthcoming." (Ibid.)

The author argues for a sound conceptual theoretical and philosophical framework for bibliographic instruction, citing Shera and M. Buckland essays as examples of writers in philosophy of librarianship.

"The growth of bibliographic instruction has led us to examine anew the role of the metaphysical and metaphorical in librarianship." (p.31) "McInnis uses the idea of H.Curtis Wright to outline the metaphysical nature of librarianship . . . Nitecki has proposed that librarianship is essentially metaphysical. McInnis and Nitecki both suggest using metaphors to teach and to understand the metaphysical nature of librarianship and the artifacts of our complex, incomplete, and sometimes frustrating bibliographic apparatus."(Ibid.) "The kinds of relationships the ideas and information in a given book bear to the contents of the rest of the subject literature are governed in part by the cognitive authority accorded them . . .

something that can be characterized metaphorically, although it is grounded in the physical." (Ibid.)

"The second factor of philosophical significance is the need to integrate the values of a liberal education into the practice of the library in the liberal arts college." (Ibid.) "An enduring concern for the meaning of life and work is one of the marks of the liberally educated person. A willingness to examine and periodically reexamine our philosophy keeps us in touch with the experiences of the students and faculty with whom we work . . . understanding the social context is crucial to understanding our work." (Ibid.)

The author discusses 'librarian as tolerator of ambiguity', and as 'intervenor', noting that "cultivating contemplation, speculation, the life of the intellect, and careful observation provides a needed framework for activism." ( p.32)

ENNIS, PHILIP, H., 1962:

The imbalance between the scientific and technological explosion creates a complex social network of communication, resulting in the emergence of two extreme kinds of malfunctioning responses: (a) the Luddite violent reaction to the technological changes, and (b) technocratic enthusiastic endorsement of innovations.

The library problem is further augmented by the nature of serving two kinds of patrons, the subject readers and its own organization, calling for revolutionary response to changes and conservative administrative attitude.

The author argues for flexibility in meeting technological changes, by (a) redefining the boundaries of the field, (b) changing the old image by changing the name, (c) redefining the mission, (d) establishing a new institutional role, and (e) changing recruitment and education of newcomers to the profession. The professional status and control ought to be based on functional operations rather than technological innovations.

"There is a strength of being forewarned, for it will be recalled that the Luddities were all hanged. The technocrats suffered a worse fate; they were soon forgotten." (p. 198).

---- 1964:

The major issue of the American public library is the problem of reaching potential clients that are geographically dispersed. The initial goal of public library was the provision of educational services to all, with information service and recreational reading considered secondary. This mirrored American democratic tradition of counteracting special privileges and a cultural imperialism of the progressive era that everyone should be made better by reading. With the significantly improved environment, these goals become less relevant, resulting in a double failure of either receiving insufficient allocation for maintaining major goals, or retreating from the goals themselves. The public library becomes almost socially invisible.

"It seems imperative that public libraries reexamine their multipurpose situation and set clear priorities on their objectives." (p.178) "The alternative is to drift with the accidental pressures of demands and to move rudderless with the tide of fluctuating and residual public interest." (Ibid.)

ESDAILE, ARUNDELL, 1933:

Modern period in the history of the library began at the end of the 15th century following Renaissance focus on historical and vernacular literature. Reformation's neglect of literature resulted in scattering library material among monasteries. These changes prompted a call for the establishment of libraries responsible for the preservation of books that would give the society a sense of oneness. Eventually the concept of 'a museum library' was replaced by 'a laboratory library', and by improved access through adaptation of innovations.

Esdale was the first to use the term 'social responsibility' defined in terms of major library functions to preserve, and facilitate the use of collection by adaptation of new technology and by 'propagation of knowledge by fission', allowing for a growth by specialization and branching.

F

FAIN. ELAINE. 1977:

As official selectors who determine what can be acquired, librarians face 'the selection-censorship muddle', created by the paradox of confusing freedom to read, intellectual freedom and freedom of thoughts with quality selection of library material.

John Stuart Mill defence of freedom of thoughts is based on (1) consciousness of thoughts, feelings and a freedom to express and publish opinions, (2) liberty of taste and pursuits. He argued for a 'permanent floating soapbox, 'a traveling free marketplace of ideas', but he did not identify the guardian of these rights.

The freedom to read is based on Mill's concept of individual freedom, while the selection policy relates to library function. The two are unrelated. Librarians can serve as society's soapbox, its official guarantor of a free marketplace of ideas, but they do not know which reading is 'good' for the patrons.

Soapbox function is legitimate library function, but must be disentangling from 'intellectual freedom' concept. It is limited by available resources: the selection of material is, in addition, determined by the educational and cultural goals of the library.

--- 1978:

In 1850s both public schools and libraries were products of movement for social reform, considered as gateways to moral and social progress. Post-Civil War social changes created by urbanization, industrialization and immigration, were addressed by a new middle-class urban professionals who, searching for solutions to social problems in new social theories, developed a new set of values based on 'bureaucratic orientation'. The mission of the common school was the formation of students character.

The public library was firmly linked with common school by continuing where the school left off and by offering opportunities for 'self-education'. Both were supported by the same constituencies which provided tax support for the same purpose, with public library providing services to adult education only (children under age 12 or 14 were not allowed in the library).

Toward the end of 19th c. pressure increased for the public library to supplement school education, by providing textbooks and by abolishing age restriction. In 1896, on Dewey recommendation rooms for children were introduced in schools, and children librarians emerged as a new specialization introducing children to beauty, idealism and away from trash literature. The combination of this romanticism of early child education lead to the kindergarten and children library service movement, with socialization's overall goal to bring rural virtues to city tots.

School libraries were not needed in the 19th century schools because they were characterized by mechanical drill. The school reform, which started in 1892 changed the school from an 'oppressive factory to progressive institution', with school libraries incorporated into school programs (at least in theory, to support new educational philosophy concentrating on problem lesson, laboratory methods, supervised study etc.

Secondary schools shifted from academic preparatory school to comprehensive institutions, motivated by growth of technology, economic advancement and increase in urban population.

In 1956 American Association of School Librarians fully endorsed the concept of the school library as an instructional material center for new media, changing its mission from exclusively culture-repository of books (teaching children to read books) to curriculum and instruction (supporting the school curriculum). The discrepancy between the idea of a school library and the reality of its marginal role in school educational activities created disappointment and criticism.

The criticism focused on a disparity between noble public statements and not so noble private beliefs. In addition, the passage of compulsory education legislation differentiated between public and school libraries, forcing the public library to abandon its 19th century educational mission, and to focus instead on an audience outside school.

FAIRTHORNE, R.A., 1961:

This is a collection of 16 papers on recovery of records by their subjects [sc. information retrieval], which involves conceptual classification, mechanical marking and parking operations.

It surveyed the boundaries of retrieval considered as a social process, based on a system and user-oriented approach (what is needed vs. what is possible). It is a mathematical and engineering viewpoint applied to library science and it involves lattice algebra, Brouwerian logic and generality functions.

"For some millennia librarians have had to deal with texts as carriers of concepts, and with texts as heavy objects with marks on. They have evolved efficient techniques and principles to cope with these aspects severally, rarely have they discussed texts in both capacities at once." (p.ix)

Delegation of tasks to the machine depends on the amount of detail and instruction available for the machine. Mathematics and machine can answer questions but cannot ask them. Efficient coding in library classification links the most frequently required title with the least expensive operations.

In communication, semantics is needed only at the beginning of the process to define the terms. It is concerned with synonyms within a given field of recorded knowledge as it applies to books: the concepts such as ethics, or truths are irrelevant. In electronic communication `meaning` is conveyed by the rules of use.

The principles of communication theory include: (1) numerical relations between physical processes and what one wants to say, (2) statistical relations between information and the action of transmitting it, measured in terms of reduction of uncertainty (probability). The ordinary meaning of information involves the content of the symbol and the reaction of the user and (3) noise (uncontrolled events) is combated by repetition.

Well written paper, similarly to a good invention, anticipates new papers; papers once written are either deducible from their predecessors, and hence not original, or they are incorrect.

This book "does not solve problems, but it does indicate how to solve them by displaying their interconnections. All documentary theory eventually stands or falls on how well it corresponds with documentary facts. The function of a mathematician is to make keys. It is up to the documentalists to provide the correct lock." (p.185)

---- 1967:

'Information flow' may be metaphorical, it may refer to the storage of physical documents or transmission of signals. It is necessary to state the conditions under which one uses the term.

Within the field of 'notification' (i.e., mentions and delivery of recorded messages to users) there are twenty basic activities formed by choosing traits from the six variables: Message-Code-Channel-Source-Destination-Designation.

'Flow' has meaning only when two such triads have two variables in common and form a tetrad. The flow or correspondence between any pair of variables is inextricable from a conjugate flow or correspondence between various pairs. Between any pair of endpoints there are six possible distinct types of flow, according to which two of the remaining four variables are directly used to achieve that flow.

Amount of information measures not a 'stuff' but relations. Shannon considered only the most essential aspects of communication, the design of patterns of signals; it involves informing in the sense of telling or signaling, in the most simple form. The recipient is told which message has been chosen, not what the message is or what it refers to. Shannon's model is necessary but not sufficient.

A 'code' is a symbol system indicating choices made from a set of messages and are represented by signals or inscriptions. The message is an agreed finite set of identifiable entities. The sources are within the environment (publishers, distributors, etc.). Destinations are individuals who are to be told. Notification is the task of alleviating the situation where the reader has to receive the message indirectly through a document: it includes a source (author), designation (topic of interest), code (script, language) and a channel (physical access). Marking and parking are defined by the channel (site), destination (reader), code and message.

Librarians are not the authors, printers or telegraphists; they only deliver messages, and are concerned with the subjects of discourse, how they are written about, who writes about them, and how often they are asked for in what terms and by whom.

---- 1968:

Information retrieval is an essential step in all library services. it does not use records but only mention them. Its scope is limited by recorded discourse and technologies such as printing. Its value is in an efficiency of providing needed material. It deals with both linguistic and physical matters, i.e., it is what the people say it is (social), and it is what it is (physical). Coordinated indexing system is affected by a confusion between names, words and concepts used in the retrieval.

Every discipline has three aspects: utilitarian, aesthetic and philosophical. The practical value of any theory is in offering solution to a problem by application of general principles, and by identifying and stratifying functions.

The term, 'information retrieval' was coined by Calvin Mooers in 1949, as a service that is initiated by the reader not by the source of the message. Other term used is 'message delivery'. It is a tool of recorded discourse, but it does not take part in the discourse itself.

It is futile to asses retrieval system by 'user satisfaction.' Usefulness depends not upon retrieval system, but on the existence of the document to be retrieved. The retrieval system must be judged only by how well it supplies reader with what kind of document the reader prescribes, and only with respect to the documents that are accessible.

It is important to avoid confusing 'what is spoken about' with 'how it is spoken about', for example: (1) 'A gives B information: i.e.. self subsistent substance 'information' that can be retrieved. It is accepted as a metaphor but not as an expression of reality. (2) 'A informs B about C': i.e., B's knowledge about C is changed by what A has written. This depends on many factors outside librarians control (e.g., B's personal history). (3) 'A tells B about C': i.e.. this is the only level on which librarian can work. He can help B to find out what A say about C. Librarians "can make it easier for B to find out what A, and others, have to tell about C. This is big enough aim to keep librarians busy indefinitely . . . it is also an aim worthy enough to be called a profession in its own right." (p.369)

---- 1968a:

In comparing his system with Nitecki's, Fairthorne criticizes Nitecki's concentration on one triad only (generic book-its content- and user), thus confounding under BOOK Fairthorne's MESSAGE, CODE and CHANNEL, and ignoring the element SOURCE. Fairthorne argues that Nitecki's triad is a confluent case of his own triad. He also objects to Nitecki's interpretation of knowledge as a subject of study in library science in opposition to Fairthorne's own insistence that the discipline should focus not on knowledge but on a discourse, by distinguishing between being informed 'by' vs. 'about' the document.

Nitecki replied (1968a) that both theories, Fairthorne's and his own, use the same strategy by describing two basically different phenomena. Fairthorne's 'signaling' is a Shannon's term, while Nitecki stresses the meaning expressed by relations between carrier, content and the reader of the book.

They differ in consideration of knowledge: Nitecki sees KNOWLEDGE as the content of a book, its subject, of interest to library science, while Fairthorne advocates a DISCOURSE. This is a distinction in a focus of a theory: being informed about the document (librarians' task) or by a document (author and reader's task).

"By comparing both papers, the reader may or may not detect the 'confluency' of the hypotheses in the two papers; but he should notice the absence of a confocal character within them. In each of the papers, the nature of librarianship is examined through lenses of different focal lengths." (Nitecki, 1968a, p. 373)

---- 1968b:

The author criticizes Borko's essay for a lack of conceptual foundations, by stressing the importance of distinguishing between use and mention of records and "the systematization of what you are doing, even if you do not know exactly what you are doing, or why you are doing it." (p.89)

Machines deal with marks manipulated according to given rules, they do not deal with numbers but with numerals. Facts are linguistic expressions that conform to a strict format; factual statements are not always about facts.

Information science is a sub-sub-sub system of sociology; how people write, use and ask for documents and by informing them about available records. The only way we can appreciate a concept is by discussing a topic in its own right, not in terms of its application.

Diagrams are most misleading in information science because most linguistic expressions are not binary, yet the line in a diagram has only two ends.

---- 1969:

- "Records are representations of what has been said by someone to be said to someone else, or about which someone may request to be told." (p.25) Records are produced, manipulated and applied in a wide range from logico-philosophical to the physical; all of them involve social environment (they are not spontaneous), all depend on language and human judgement but exclude private processes in an individual brain. Because of the subjective aspect of the individual's involvement in communication and social context, an analogy of brain to a computer is misleading.

Documentation science studies discourse as such, and as it is - not as a topic of discourse or its verification. Computing science is concerned with symbol manipulation, not with what the symbols may stand for. Documentation deals with semantics and pragmatics, computation with syntactics and pragmatics, while communication makes use of each other techniques. In document retrieval process there is no meaningful analogy between social use of a library, computer access to information and brain. Information science is not focusing on the application of the tools, such as computer or document, but on the principles and purposes of these applications.

---- 1973:

The author discusses the ignorance of the computer: it can differentiate but not quite recognize or match items unless specifically instructed: it can hardly identify or put a name to the data, as contrasted with human ability to identify, recognize and differentiate between data.

Librarians deal with 'aboutness', listing things that are mentioned in the document, they do not address the truth or consistency of documents: they help people to find out what someone has to say, but not what was said. 'Aboutness' entails knowledge of what is going to be used by what class of readers. The librarian must be knowledgeable about the discourse, not what the discourse is about. The patron's satisfaction does not depend on truth or consistency, but on his preference. Intentional aboutness appropriate to a given class of readers is determined by their ignorance about the subject of inquiry.

---- 1985:

L.R.Morris's historical references to Babbage's 'desk calculator' is incorrect. Numerical calculating machines are older than Babbage invention. In 1830 'desk calculators' were already in use. Babbage constructed in 1830 a 'difference machine' and set the principles for his 'analytical engine'. This was more than just a calculating machine, and is now considered to be a prototype of a computer. Bush's 'differential analyzer' was a multiple integraph for the graphical solution of ordinary differential equations. Number of analog devices were already known in the mid-nineteen century (mechanical, electrical, hydraulic, etc.); and the logarithmic slide rule has been used since the end of the eighteen century.

FAISON, GEORGIA H., 1961:

"Perhaps a reference librarian's forte lay in the organizational framework of a subject field; in a grasp of the salient characteristics of many areas rather than in the richness and depth of the contents of any: in a biographic-procedural-transfer-pattern, as it were, that would cover roughly all fields; in taking a fact from one setting and in transplanting it indigenously in another; in thinking of an isolated event or movement in the broadest involvement possible." (p.291) It is important that a rapport between the reference librarian and the patron exists with the channels of communication open.

FANO, R.M.., 1956:

Information theory provides a basic understanding of communication processes and of the efficient and reliable encoding and decoding of messages in their transmission.

The problem facing the information scientist "might not be so much that of mechanizing libraries as that of mechanizing the librarians that run them, and that the machines that would have to do the routine part of the work of the librarian must be told exactly what to do in their own precise language because they do not understand English and . . . have no common sense." (p. 244)

FARMER, JILL ANNE, 1993:

The poststructuralism is a form of cultural criticism, opposing epistemology of positivism by questioning sociology of knowledge in librarianship. 'Text' refers to the relationship between the reader, the cultural environment and the text's meaning imposed by a variety of factors. "There is no objective reality; rather, reality is socially constructed." (p.393) The "formation of conceptions is a function of one's socioeconomic background, methodological preferences, or personal experience . . . [and] the sex of the knower is epistemologically significant." (p.393)

A distinction is made between two perspectives: (a) of the poststructuralist Communication Studies, continually creating meaning by interactants, and (b) of Information/Library Studies focusing on the outcome resulting from the managed information transfer. A poststructural focus in librarianship should be on the way information is selectively interpreted, encouraging analyzes of information from non-conventional perspectives in the context of societal values and epistemological criticism. "As information professionals, we owe it to society to ensure that economic and cultural dominance does not distort information access and interpretation." (p.404)

FARRADANE J., 1980:

Information science is a cognitive science, dealing with thought processes as a part of communication, teaching and learning. "More we study the two cognitive ends . . . the cognitive processes which produce information, and the cognitive processes which occur on the receipt of information, the more we may be able to improve and control the processes of information storage and retrieval to attain desired results." (p. 75)

Thought is not derived from language; language is learned by a process of associating percepts into concepts through thought processes, with mind translating thoughts into language.

Knowledge is defined "as a structured (interrelated) set of concepts in the brain. Thinking is then any stage of these processes; a 'thought' is perhaps what is retrieved . . . from long-term memory." (p. 77)

---- 1981:

Defines 'information' as writing or speech used for communication of knowledge. It is equivalent or a surrogate of the knowledge to be communicated. More generally, information is human interpretation of experienced phenomena. It is neutral, providing a reference point to the comparison with the originator's knowledge and intentions.

Data are 'given' not necessarily as 'raw facts'. The 'sense data' are the effects of postulated external influences, the 'percepts' temporarily stored in short-memory.

Brain re-sorts and classifies percepts into long-term memory as concepts, which can be recalled, re-ordered or manipulated for various purposes. The totality of these concepts and the interrelationships between them is knowledge; its manipulation is called 'thought'.

Reality is a construct, created from sense data and concepts and it is accepted by consensus. Knowledge is not necessarily true at any given moment, it relates to the truth in terms of the degree of its disapprovability. Language is a system of symbols learned by association with percepts.

The author suggests a standardized definition of information as a language vehicle of communication.

FAYEN, EMILY GALLUP. 1986:

Library service is directional, it points to the sources but does not provide answers without judging the value of the sources. Neutrality is justified in an academic environment in which students are thought how to evaluate the information themselves.

But "if librarians want to hold positions of authority . . . [they] must be prepared to take on the responsibility of providing real information and vouching for its correctness." (p. 241)

FEDANZO, A.J.. 1986:

The author discusses functional equivalence between biotic and organizational systems that can be described as Darwinian evolution. Organizational genetics describes the functional equivalence between organizational data model and organic, genetic material. It is (a) based on Darwinian evolutionary theory, (b) it offers a synthetic view of human activities and change-making forces, (c) which are based on a sufficient biological knowledge, and (d) it allows for prediction of consequences resulting from modern technology.

"Computerized data management has led to the existence of an actual, concrete functional equivalent of the species' genetic pool. This equivalence resides in the organizational data model; an information laden structure that contains the form, content, and basic procedural rules for routine data handling and processing in an organization." (p.21)

It is presumed 'that information is a satisfactory substratum upon which to base a single unified view of evolution acting in its biological and newly extant organizational contexts ." (p.22) "The genetic material in organisms is functionally equivalent to the content of data model . . . both are essentially information structures that actively direct both the ontogenesis and many behaviors in their respective systems." (Ibid.) "Darwinian selection operates upon these organizations with the requisite information equivalent to genetic material." (Ibid.)

Darwinian selection is a creative process (positive feedback) supporting or suppressing (negative feedback) process in random selection.

The role of the genetic material is to (1) define the developmental process, (2) control the behavior of the organism, (3) provide information needed to preserve continuity between generations, and (4) provide causal basis for variability in environmental selection. Similarly, data model (1) defines in detail organizational functions, (2) controls the content and timing of many functions, (3) contain necessary information for replication of the basic organizational structure and (4) it is the only information that describes the organizational history and operations of the organization.

FEDERAL LIBRARY COMMITTEE, 1978:

The committee discussed the new role of a federal librarian in the context of the increased share of data-based information storage, retrieval and reduced importance of retaining printed material. The aim was to reduce the mass of paperwork by making information processes faster, smaller and simpler by mechanizing, simplifying and streamlining information production.

Information is viewed as a value-laden commodity; the new role of a librarian as an information manager is to advise the administration about the information content and purpose in specific programs, by asking 'an educated why'? ' about information needs in planning, operating, managing and evaluating programs. The focus ought to be on information services rather than management of information resources.

FERGUSON, MILTON, J., 1938:

Education is an individual process; instruction comes through interest and entertainment. Libraries supplement other educational agencies but they lack sufficient financial support, caused in part by uneven distribution of wealth.

Librarians must guard the right of free speech against censorship. "We should fear to speak, not because our liberty is at stake, but only because our reasoning is weak." (p. 627)

FESENMAIER, STEPHEN L., 1988:

The author criticizes Allan Bloom's thesis that the current mass culture and anti-intellectualism are blamed on German philosophers and hippies. The author links this view with 2,500 years of Platonic totalitarianism and fear of change. To him "Bloom is America's 10th rate Heidegger."(p. 9)

FINE, SARA, 1984:

Human behavior is an essential aspect of librarianship. Behavioral perspectives relate to the 'soft side' of librarianship, the way librarians think, feel and behave, their interaction with the patrons and the processes of motivating, resolving grievances and creating harmony in library environment.

FINK, DONALD G., 1976:

The principal and technical problem of information science is to know if the knowledge about desired information exists and can be available by retrieval from a mass of unavailable information such as trade secrets.

The new technology will add to the previous common sense and empiricism the new methods in abstracting, use of models, simulation, decision theory and systems analysis.

FINKS, LEE W., 1989:

"Values represent a level in our belief system that is deeper and more substantial than mere attitudes, or hunches, or opinions - a level that is less influenced by time and circumstances, one that is more concerned with ends than with means." (p.352)

The author divides all values into four categories: (1) professional, 2) general, (3) personal and (4) rival.

Professional values include (a) service-oriented commitment to truth-seeking, intellectual freedom and responsibility. (b) Philosophical values reflect traditional love of wisdom, and search for truth, maintaining neutrality in ideological controversies and resisting censorship. (c) Democratic values reflect the culture in which the library exists (e.g., in USA political freedom, informed citizens, universal education, literacy and opportunities for self-development). (d) Commitment to reading and books.

General values shared by many people include: (a) social values of cooperation, competence, tolerance, sense of duty appreciation of needs for security, acceptance and self-respect, and (b) work values of competence, freedom to chose our own work and commitment to excellence,

Personal values, idiosyncratic to librarians as a group, consist of: (a) humanistic values of respect to other individuals, (b) idealistic values of ideal reference, cataloging, and collections, belief in honesty, justice, and truth, (c) conservative values to save, preserve and protect, orderliness and control, (d) aesthetic appreciation of beauty, harmony, originality and good taste

Rival values include: (a) bureaucratic values of pettiness, and rigidity, (b) anti-intellectual values of mediocrity and trivialization of learning and discourse, and (c) nihilistic values of cynicism and disbelief.

FLETCHER, HOMER L., 1968:

In a letter to the editor, the author criticizes Shera's view on intellectual freedom, by arguing that there will never be a determination of what effects, good or bad, reading may have on an individual reader. He objects to the notion "that should a book be proved inimical to the welfare of the body politics it should be censored."(p.565) "Such statements only serve to confuse librarians and allow them sanctuary to deny their obligations to face any and all ideas without cringing." (Ibid.)

FLETCHER, JANET, 1983:

The politics and philosophy of collection development changed form 1950s idealism and 1960s activism into skepticism about the government role, creating tensions between patron needs, wants and a library mission. This change affected the perception of the quality of collection, and increased demands for preferential treatment, by expecting librarians to be involved in public relations, to update their own skills and to teach patrons to become effective information users.

"Perhaps the most challenging role for librarians in the future, according to Haas, will be in teaching the citizen to become 'a successful user of recorded information.'" (p. 882)

FLETCHER, WILLIAM I. , 1894:

"One of the highest aims for a public library may be to divert the recreative reading of the community into better channels, to replace trash with light literature . . . and so gradually elevate the ideals and sentiments of the people." (p.32) "Library directors [are] required, to accept and exercise full responsibility for the moral character and influence of the library." (Ibid.)

FOGL, JIRI, 1979:

Information (means for social communication) and knowledge (cognition of properties of objects and phenomena of objective reality) are considered as a social and scientific discipline.

Information can be studied in terms of its semantic, pragmatic aspects or as a method of fixing knowledge and value judgment.

"The content of information thus stems from cognitive and evaluative activity, not from the process of creating information . . . [as] the linguistic recording of the contents of consciousness, that is when the cognitive and evaluative processes during the creation of information are still continuing or in the process of ending." (p. 22)

Information is an independent value, by itself a specific object of reality. Knowledge is contained in information, old information dies out when new knowledge emerges. This interdependence is formulated in the "law of constant functional interdependence between the development of the contents of knowledge and items of information." (p. 23)

Professional information (scientific, technical economic and political) is created by a society: scientific knowledge becomes a component of Marxist-Leninist ideology through professional information, influencing social groups, individual aims and directions in the use of cognitive activities.

FORD, NAGEL. 1979:

The author suggests a conceptual model that unities 'libraries' and 'learning', "in order to facilitate the application, and generation of research of relevance to the two areas. The concepts of 'independence' and 'structure' are suggested as possibly central components of such a model." (p.25)

The 'independence' factor relates to the different intellectual activities; the 'structure' to different levels of students preference and more effective learning.

The learning model consists of: 'like holist' comprehension learning, 'like serialist' operation learning and 'versatile learning of adopting either of the other two approaches appropriate for a given subject of study. 'Syllabus-bound' learning is based on organized, instructed approach, and 'syllabus-free', less structured style of learning.

A possible model of 'library learning' ought to reflect the above factors, by "1. the provision of ideas and information prestructured in . . . different ways; 2. access to a variety of frames of reference and perspectives in a given subject area or topic; 3. environment for students' structuring of their own approach to new ideas and information . . . and 4. students' perception of, and development of certain types and levels of independence from tutors." (p.30)

---- 1980:

"'Information needs' are defined in terms of conceptual incongruities, the parameters of which are described by a number of constructs originating in the fields of cognitive and social psychology. The 'satisfaction' of such needs are discussed in terms of access to varying ranges of information sources, from individual learning resources to large-scale data bases, which may contain information appropriate to the resolving of such conceptual incongruities." (p.99) "Generally, the wider the range of information that an individual has access to, (i) the more restricted to the names of 'topics' and 'subjects' have been the parameters of information needs catered for by the system; and (ii) the less the individual has been able to know about the suitability of the sources to other parameters of his information needs, as proposed, at the time of searching." (Ibid.)

'Information' is defined as intentionally transmitted communication; information science focuses on developing systems "which will allow the learner to select information from a relatively wider range of sources, but in response to a narrower range of learner characteristics - in particular to 'information needs' largely restricted to topics and subjects headings." (p. 104)

---- 1984:

The author describes intellectual development in terms of different aspects of knowledge as: (1) static, authority based, (2) actively changing and developing, (3) arbitrary, (4) combinations of relevant concepts, and (5) as personal knowledge.

Stages in intellectual development are: (1) dualistic concept of the world (good-bad), (2) awareness of differences of opinions, (3) perception of uncertainty and ambiguity, (4) relativistic approach, and (5) personal commitment to a given world viewpoint.

Learning may be considered: (1) as taken for granted; (2) as a thematic activity (context of learning affects what and how something is learned).

Two aspects of understanding any subject are identified: (a) developing an overview, (b) testing and justifying that overview.

In librarianship and information science there is a need to develop a model of "Information Man' - the information seeker, user and generator." (p.172) "The most important interdisciplinary theme of study in the future. The individual studying librarianship and information science should have a head start, in that at one and the same time he is - and is studying - this Man." (Ibid.)

---- 1986:

The author reviewed types of thinking involved in the patron's search for information, reasons for its variations and their implications in information provision.

Three categories of thinking are identified: (1) sub critical, (2) surface, and (3) deep, critical. Sub-critical thinking can be unconscious, requiring library guidance in developing users' awareness of a variety of viewpoints. Surface, impersonal search aims at the minimum required for given research. The level of deep critical thinking is determined by the patron's personal interest.

Thus the "ostensibly similar library activities - using catalogues borrowing and consulting items, asking for services and information - may hide very different mental states and processes." (p. 57) Library education must place fewer emphases on cataloging, classifying and indexing, and more on the development of analytical, critical and evaluative skills necessary to the understanding of psychological and sociological aspects of information processing.

"Without this knowledge, librarians cannot fulfil their most important role in higher education: that of stimulating and facilitating personal and professional development at the highest levels amongst all members of each library's community." (p. 61)

FOSDICK H., 1978:

The author discusses trends in library and information science education. Five categories provide a conceptual framework for present courses in information: (1) Library automation: use of modern technology, (2) Information storage and retrieval: abstracting, indexing, controlled vocabularies, thesauri, searching and comparison of different systems, (3) systems analysis: engineering, and statistical evaluations, (4) interactive computer systems, such as BRS, Lockheed, and (5) programing.

FOSKETT, D.J., 1962:

The lack of philosophy of librarianship is responsible for an absence of continuity in studies of librarianship. Among the writers on library philosophy, Savage argued for the provision of books for minorities; Raymond Smith considered as most important the implementation of the policies of the parental library organization; Mathew Arnold maintained that all reading is purposive if it is undertaken for a specific reason; Ranganathan proposed five library laws, focusing similarly to Raymond Smith on library function to provide the constantly increasing knowledge to people who need it.

The bases for library philosophy ought to include the notion that "a library is a part of social organization and that librarianship is a social process inextricably bound with the life of community." (p. 7)

Following the motto of J.D. Cowley, Foskett proposes that "a good librarian must be able, as a professional, to undergo rapid, chameleon-like, changes as one inquirer follows another. If he has no politics, no religion, and no morals, he can have all politics, all religions, and all morals . . . [requiring] the dual capacity of total involvement with each reader and of remaining objective as an individual." (p.11)

---- 1964:

The criticism of science is usually based on its alleged anti-humanism. Yet, scientific discoveries are intellectually not much different from artistic creations, although scientists find it difficult to communicate their experiences. The gap between scientists and humanists can be bridged by a unity between the public library's responsibility for general culture and special libraries responsibility for keeping scientists in touch with non-scientific cultural developments. Together, libraries can promote the unity of knowledge itself, by avoiding a scientist-humanist antagonism within its members.

"After what has so often been said about the 'philosophy of librarianship', he would be a rush man who would suggest that this is what is needed, but it is hard to find another phrase that fits the situation. The truth is that we have not yet succeeded in establishing our professional purpose." (p.239)

---- 1964a:

"I believe that the study of classification and subject analysis represents the intellectual zenith of education for librarianship; but it is not, for librarians, an end in itself. Librarianship as a practical activity carried on in circumstances that vary greatly, but the end is always the same: to provide readers with the books and information they need. Education for librarianship has for its object, therefore, the fitting of librarians to do this in the most effective way, according to the different circumstances in which they may operate. Techniques, however absorbing as an academic study, are no more than tools, to be used only as long as they prove able to do the work." (p.262)

---- 1965:

Shera maintained that documentation is the extension of librarianship; it focuses on preservation and dissemination of information. His social epistemology stresses the function of recorded information in the working of a society.

This evolutionary process started with the library as a guardian of records, preventing their use by unauthorized people to promote dissemination. The focus shifted from the identification of individual volume to their location on shelves, cataloging (easier to update the records), classification (as subject arrangements) and subject headings (grouping by content). New technology, especially automation, increased productivity, but also created new social problems. With the growth of library operations, the librarian originally a scholar, become a specialized technician, abandoning the concepts of a scholar and book-man and decreasing the prestige of the profession.

Special librarians return to the former role by providing quick and effective access to needed material, working as a team with scholars, introducing 'current awareness', and improving cataloging and classification as its fundamental techniques.

---- 1968:

"Communication is a necessary activity to Man, and libraries have a positive part to play in effecting good communication. Library techniques do not exist for their own sake, but they must be continually improved and refined in relation to the social situation and the real needs of users. Appreciation of these needs leads to a re-consideration of a librarian's role vis-a-vis the scientist, on the one hand, and the artist and humanity's scholar on the other. This role can be as active in the latter as the former, but it is directed toward the fostering of insight into the human condition rather than simply toward the transfer of information." (p.305)

The teaching of philosophy of librarianship ought to start with writings of the following writers: Ranganathan's holistic approach to library science, Butler's introduction to library science, Shera's social epistemology and Russians, essays on informatics which incorporate interrelationships between philosophy of science, psychology, linguistics, computer technology and librarianship. The concept of information gradually changed from a mental record of experience into an explanation of that experience. Library classification becomes an intermediary between the structure of the record's content and its reader's thoughts.

The theory of telephone transition of messages created a confusion between information retrieval and information theory: information theory concentrates on messages of known text, while the process of transmission of messages is meaning-neutral. Librarians are focusing on individual human needs and on the structure of knowledge as recorded in documents. They provide a bridge between the fields of science and humanities, through personal services.

---- 1970:

Informatics "studies the structure and properties of scientific information [not their specific content] as well as the regularities of scientific information activity, its theory, history, methods, and organization." (p. 155)

The author distinguishes between the activities of information storage and retrieval in libraries, the study of behavior of information itself and the properties of information flow in informatics.

Foskett reviewed the relevant views of the following writers: (a) Chomsky in his ' transformational grammar' provided rules for explaining the differences between sentences of the same grammatical form. (b) Dewey in his decimal notation arranged terms, names and objects in a scheme similar to that of genus-species relations. (c) Fairthorne's 'morphology' studied behavior of information and its properties, suggesting that a new discipline emerge from the syntheses of some aspects of other disciplines into a new coherent whole, not merely an enlargement or improvement on the existing interpretation. (d) J.R. Firth developed a contextual theory of meaning stressing that language is not the science of constructing grammar and syntax, "but rather a study of the constantly developing means of communicating ideas between human beings, each of which is endowed with a unique personality and . . . unique interpretation of the world." (p.169). (e) Piaget has proved that learning depends on the accumulation of sense-data obtained by observation or experience. (f) Saussure introduced 'semiology', a study of the life of signs within society. (g) Shera and Egan's social epistemology is based on biological need of brain to engage in information-processing activities, extended to the human society. (h) Ranganathan considered bibliographic classification as an artificial language of ordinal numbers. (i) Vygotsky worked on a theory of language, explaining human ability to convert personal experiences into communicable symbols that represent a real world to other people.

---- 1972:

Bertalanffy's in his General System Theory provided a scientific explanation of 'wholes' and 'wholeness'. Sets of separate entities can unite to form a single new entity of higher complexity, by establishing fixed relationships between the elements of the set. This view contradicts the belief of reductionism that all natural phenomena can be explained in terms of physics.

The librarian does not merely tell the patron what to read, nor provides mechanically what is asked for; but he shows all relevant interrelationships of subjects in available literature, indicating structural similarities between different fields, thus expanding the reader's own experiences.

"The consequence of the systems' philosophical approach is that libraries should never be considered as ends in themselves, as closed systems, but as open systems in constant interrelation with their environment. The objectives of the library are the objectives of the community it serves, which is still part of a larger community . . . General System Theory offers an approach of high potential in its investigation for the concepts and types of structure which are more than specific to one field, which are common to the whole universe of knowledge." (pp. 208-9)

---- 1973:

The author defines information science as the discipline "emerging from a cross-fertilization of ideas involving the ancient art of librarianship, the new art of computing, the arts of the new media of communication, and those sciences such as psychology and linguistics, which . . . bear directly on all problems of communication - the transfer of organized thought." (p. 164)

The discipline includes the study of the universe of knowledge, its production and publications, acquisition and arrangement, dissemination and use, library and information service technology, planning and management, and comparative and historical studies.

Social objectives of the discipline include (a) economical and effective meeting of the real needs of the patron, by providing a "gatekeeper" service, and (b) integrating library and information services into the society, by recognizing General System Theory's interconnections between all aspects of natural phenomena, as parts of the whole system, rather than as any form of its reductionism.

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---- 1974:

Central to systems philosophy is a person as a cognitive component, whose mind incorporates qualities of wholeness, order, and organization. Although all people are made of the same chemistry, each individual is unique by being able to enlarge his own self through experience. This bi-perspective overcomes the problems of mind-body dualism by offering two different perspectives within the two contexts of the internal and external relations of the same entity.

Library and information science also provides a dual perspectives from (a) internal relationships between its parts and activities (e.g., acquisition, cataloging, dissemination) and (b) from external activities of organizing information itself.

Library management harmonizes "the inter-action of all these relations so that the individual library is able to provide an environment which gives its own inner dynamics the chance to realize their potential to the maximum, while deriving the best advantage from the sets of external relations, its readership and the inner-library network." (p. 128-9)

---- 1974a:

The literature of Library and Information Services lacks philosophical insight because of (1) many hypotheses focus on differences rather than similarities between various issues, (2) purely empirical, pragmatic and behavioristic approach is based on responds to the problems rather than their anticipation, (3) predominant use of the inductive approach which is based on evidence, and reductionism.

Opposite view emerges from the General System Theory notion that natural phenomena consist of series of events with properties derived from interrelationships between inner entities of a system and external relationships with other systems. Central is the principle of 'wholeness' of parts within ,libraries' internal or societal external, structures of relations.

Libraries and library systems "are both systems for the organization of records in relation to the present and future needs of users." (p.16) "Similarly, documents are systems in the sense that a document is more than a heap of sheets of paper covered with marks. The marks are letters . . . organized to make sense . . . and the sheets are organized into a particular sequence." (Ibid.) "A library is a system in itself, but its parts can only be fully explained in relation to their inner and outer bonds, the library as a whole, and its activities connected with the other systems of which it forms a part." (Ibid.)

---- 1979:

"When McLuhan said 'the medium is the message' he was reducing the human mind to a mere tool . . . [however] what matters . . . is the message itself, not how it is send." (p.269) We are responsible for transmitting "not mere information, but knowledge and understanding; that means information which has become assimilated into the mind of another, and so become an integral part of his personality." (ibid.) "We have come to recognize unity in diversity, and to find, among all types of library, a common professional motivation to serve our readers." (Ibid.)

---- 1984:

In this collection of reflections on information, communication, information technology and libraries, the author argues that communication involves more than just moving information, the information technology is not a message and the form is not the content: the destination is more important than means of transport. Electronics devices will not record compassion and satellites will not communicate tolerance.

---- 1985:

This is a review of the writings on the future of librarianship by Licklider, D.J. de Solla, Bjorn Tell and F.W. Lancaster.

"What such writers say does not correspond to the real situation, either in the libraries or in the world of communication as a whole." (p.47) "Where theory and practice are apparently in conflict, this often turns on confusion between form and content, or method and purpose . . . each influencing the other; but content of purpose is primary, and should not be subordinated to method or form." (Ibid.)

Other problem is a confusion between statements of facts with discourse about subjects. "The confusion rests on the assumption that all processes of information transfer can be reduced to the behaviorist explanation of response to stimuli, with satisfaction of need being completed by on appropriate action, like the rat that presses a button to obtain food." (p. 48)

---- 1986:

"We transform data into information when we place such statements into a structure of ideas that forms a coherent whole having relevance to what we already understand from our previous experience." (p. 314)

"The process of communicating with a machine represents the lowest level of conversation, since the machine can do no more than answer. It cannot explain: the best it can do is to tell us to think again. We are thrown back on our own resources when what we actually want is to enlarge them by filling gaps in our knowledge." (p. 315)

"In books and journals we find more than the enumeration of mere facts. We find the opportunity for consultation, study and reflection over coherent systems of thoughts elaborated by a human mind, a mind not limited to working with bits and pieces, but exploring the nature of the whole system of ideas worked out by the author." (p. 316)

FOSS, S.W., 1909:

The author points out to the paradox of librarians' virtues: toleration of other peoples views (judicial neutrality, intellectual hospitality, and agreeableness), being all things to all people, and considering all people as the same. In his enthusiasm for work with books, a librarian is like a janitor, keeping the library in good shape for controversial ideas.

Librarians' personal activism is important for obtaining adequate appropriation by personal contact with people in power, but also managing the library by avoiding trustee's intervention. His/her duty is to get good books and to get them read by maintaining attractive and pleasant environment, and by establishing himself as an intellectual leader in the community, a custodian, an advisor and a teacher.

Reading habits will be improved by free access to the collection, stressing circulation of library material; the older approach dedicated to the past, was concerned more with preservation than distribution.

FOSTER, MARIA, 1979:

The purpose of this study is to determine the status of philosophy of librarianship in library education. Philosophy of librarianship is often used as a synonym with definition of librarianship: R.Irwin identified philosophy of librarianship with its purposes, while J. Christ with its functions. P.Butler saw it in the context of the individual in a society; A. Broadfield stressed the central importance of individual, with society's obligation to support library services to the individual. D.J. Foskett felt that librarian ought to be the alter ego of the patron he serves. J. Shera's social epistemology stressed the importance of knowledge to both the society and its individual members. Both Kolitsch and R. Burke based their definitions on theology.

Broader approaches are illustrated by C.O. Houle's focus on education, information, aesthetics, research and recreation; L. Shore emphasis on 'generic book' as communication possibilities, and by J. Thompson argument for the definition based on the power of libraries represented by their collection of cultural records of the society.

The categorical approaches were developed by R.K.Rao's actional, organismic, naturalistic and reflexive modes; by J.Z. Nitecki's procedural, conceptual and contextual premises reflecting the three library objectives to collect, educate, and mediate, and by J. Bakker's three usages of library philosophy: (1) as a frame of reference, (2) formulating aims, purposes, objectives and functions, and (3) as an ideal professional model. And finally C.O. Houle noted that no common denominator in the definition of philosophy of librarianship has yet been developed.

Foster proposes her own model consisting of four elements: custodial (conservation), humanitarian (knowledge-focused), mediative (client-oriented) and promotive (service-driven).

FOX, CHRISTOPHER JOHN, 1983:

The author attempts to resolve the ambiguity concerning the term 'information,' by applying a philosophic analysis to 'the ordinary notion of information.' He dismissed current discipline-specific information theories, and concentrated on the everyday meaning of the term.

Analytic approach used by Fox, considers theory and definition as the same study of language, focusing on how it functions rather than what is its nature, thus explaining away philosophic problems.

He reduces the concept of information to the propositions, as language independent representations of the world, and distinguishes between information and misinformation, informing, believing telling and knowing, informing and information, belief and truth. Accordingly, informing means to be in a position to know,' and a receiver must be in the state of readiness or informability, hence information science is closely related to communication.

Basic principles of conceptual analysis are consistency, simplicity and systematicity. "Although there are certain principles and requirements to which analysis must conform, the activities of providing an analysis, and of judging whether a suggested analysis is satisfactory, are as much arts as sciences and leave room for disagreement and controversy. " (p. 29)

FRAGASSO. P.M. 1979:

Some of the realities of the 20th century American public library fulfilled or exceeded the expectations of the past.

Bellamy's Looking Backward, a 1888 novel set in the 20th century, criticized the library of his time as too inflexible and an elitist, valued for its impressive look and for expressing community's cultural awareness. Books were viewed as ends in themselves, to be admired at the distance. Similarly college libraries were collecting everything on the assumption that it can be of value for future research in the 'history of the field'.

Hertzka in his 1891s Freeland, A Social Anticipation, advocated a compromise between socialism and individualism, suggesting purchase of many copies of books in high demand (an approach similar to McNaughton Plan or Friends of Library sales).

Wells in Men Like Gods, described in 1922 an innovative library system that created an image of a public library as people's university: people coming to a library to instruct and be instructed themselves.

Hicks, in The First to Awaken, noted in 1940 that till present day, people lived their lives in stages consisting of: education for young, work for middle aged and leisure for old age, providing for social and economic stratification and suggesting life long education through reading.

Skinner in 1948 novel Walden Two, argued for the people oriented public library, with the books meant to be used, and the books not used not to be bought or kept.

FRANKLIN, BENJAMIN, 1731:

Franklin founded the Library Company of Philadelphia (1731) as a subscription library that "improved the general conversation of the Americans, made the common tradesmen and farmers as intelligent as most gentlemen in other countries, and perhaps contributed in some degree to the stand so generally made throughout the colonies in defense of their privileges." (U.S. Bureau of Education, 1876, Part I, pp. 505-6)

FRANTS, V.I and C.B. BRUSH, 1988:

All conscious activities are directed toward the satisfaction of needs; one of the most important is a need for information. Since it is essential for survival it is considered a vital need.

The satisfaction of the information needs can be accomplished by finding needed information among the store of knowledge, or by producing that information oneself. The two methods are partly contradictory; there is always too much information and also always too little of it.

The subject of information science is the information need itself and the study of methods and forms of satisfying it. Information need is a psychological state, reflecting 'dissatisfaction' or 'discomfort'. Its boundaries are vague because man cannot exactly express his psychological state.

A person may need information that can be satisfied by one or more documents, that express (a) concrete information needs, or (b) problem oriented needs. The same question posed by a patron may reflect different needs, each required different kind of information, in turn generating different types of documents. The user has no real need of retrieval, but a need for information.

FREEMAN, MICHAEL STUART, 1985:

Librarians expect the development of the systematized theories that will explain, predict and describe the structure of information and the dynamics of library management, by applying the spirit and the methods of research. Present theories are criticized for not relating to library practice.

The term 'research' is interpreted by librarians dialectically, as essential abstract process in developing library theory, or as a means for solving practical problems. "There are no scientific laws, few theories, and only a handful of useful models . . . rooted in a common educational experience, a sharing of problems relating to the custodianship of resources, agreement on a series of protocols on such diverse topics as cataloging and standards, and a widely held disapprobation of censorship." (p.29)

FREISER, LEONARD H., 1970:

"Information service involves a process which includes an actuality on one hand and learning on other . . . no one wants information per se; what is wanted is the knowledge which results from information. We are involved in the learning process as well as in the nature of information." (p.41) This entails "a change which knowledge may help bring about. At this point we become fully engaged in both education and social action." (Ibid.)

Problems facing librarians include: resistance to active participation in educational and social programs; "presence of pedantic, philistine and depersonalizing influences . . . inability to see similarities between the public temper and library style; the debasement of power; the debasement of objectives; and confusion concerning information." (Ibid.)

---- 1988:

The objective of public library philosophy is to define its role to provide advocacy and leadership in a democratic society. In the age of information, reference, although the major library responsibility, is not by itself its strongest point. The call for self-reliance and user's free access to online searching enhances reference but does not make it easier: 'canonization' of information will not improve reference performance.

There is a need for solving the problem of information transfer created by library's political function to provide information access to everyone, by avoiding elitism and paternalism. Every request deserves full librarians' attention.

The pessimistic concern about the future of a public library is used as a Trojan horse to change the traditional librarianship.

FRIIS-HANSEN, J.B., 1986:

Ranganathan's analytico-synthetic approach, together with his Colon classification, Five Library Laws and reference work are considered major contributions to library science.

"By means of an analysis of the subject content of a document it is being ascertained, that no search possibility in a document is left out of consideration. By means of a synthesis of the extracted or constructed subject elements in a meaningful chain of subject headings or classification symbols it is ascertained, that no possible search key is hidden to the user." (p.315)

FROHMANN, BERND, 1992:

In the cognitive view of librarianship, information is seen "as a commodity and persons as surveyable information consumers, within market economy conditions." (p. 365) "The effect of the cognitive viewpoints discursive strategy is to enable knowledge acquisition of information processes only when users and generators' 'images' are constituted as objectively given natural-scientific entities, and to disable knowledge of the same processes when considered as products of social practices." (Ibid.) By focusing on image creation, interpretation and delivery detached from material objects and marketed as commodities "the cognitive viewpoint performs ideological labour for modern capitalist image markets." (Ibid.).

In this 'hyperreality of communication and meaning' the reality itself is destroyed, and replaced by simulation with "the cognitive viewpoint's theoretical discourse of images pursuing images, representations chasing representations, and world-models requiring repair offer no escape from system domination . . . it helps to inscribe existing power inequities into the heart of LIS theory." (p.384) [LIS stands for Library Information Science]

FRUMIN, I., 1977:

The library is defined as a triadic integral system consisting of books, library and its readers. It has two functions: (1) social to satisfy society's needs, and (2) technological to operate the system. Its mission is to improve workers cultural and technical standard. Librarianship, bibliography and information science are independent and indivisible.

FRY, BERNARD M., 1939:

Relating to B.Berelson's (1938) essay, the author states that "The basic assumption of partiality is that there are large numbers of individuals who are either unable or unwilling to see the 'right side' of controversial socio-economic questions. It is to be the function of the librarian to disclose the right answers as determined by the 'frame of reference' and to 'encourage' her patrons that they will correct their modes of thinking in the light of the revealed 'facts'. (p.52).

"Such a thesis is an intolerable denial of democracy and can be supported only at the price of a certain blindness to the actual dynamics of society. It rejects democracy in that it is essentially a mistrust in the average man's ability to do his own thinking. It is also based on a radically false philosophy of society because it affirms a finality of agreement on vital controversial issues, which can never be reached except in a static society or in the wishful thinking of Utopians." (p. 53)

FURTH, HANS G., 1974:

The author emphasized the importance of the information theory, which, following Piaget's developmental theory of knowledge, ought to include knower's activities that relate to the content of what is known to him.

"Piaget's theory can make a fundamental contribution to the study of information. The figurative and operative aspects of knowledge, clearly described in Piaget's developmental theory, play an important role in information; a neglect of differentiating these aspects can only lead to practical and theoretical confusion." (p. 21)

Information is of two kinds: as a coded fact (in Piaget's theory a figurative aspect of knowing), and as a process of knowing (Piaget's operative aspect). Operative knowing means knowing how to act; figurative knowing refers to a static aspect of a particular configuration in a given situation. "Operative aspects focus on what is general; it assimilates or transforms what is given." "The figurative aspect focuses on what is given and applies or accommodates the general capacities to the uniqueness of each concrete situation. In Piaget's terminology assimilation is the inner-directed process from particular objects to general operative schemes, accommodation the outer-directed process from general schemes to particular figural content." (p. 24)

The figurative aspect of knowledge is outside the person. The commodity of information is relative: any symbol is meaningful only in relation to an operative understanding, which, when changing, also changes the meaning of the material symbols.

- G -

GAINES, ERWIN J., 1968:

The author criticizes Shera's equating censorship with selection. Librarians as brokers in words must defend free press "without regard to whether they like what they are defending." This is not the same as the question of what to put into the library. "Librarians certainly ought to choose what they think best," but this does not necessarily imply that they lose the "power of choice in book selection because [they] defended an unsavory book." (p. 458)

The views of Ticknor and Everett are not germane in 1967. Although one may be weary of the debate, it "must proceed until the issues are clearly understood and until librarians are sufficiently aroused to their responsibilities as influential citizens." (p.459)

GALLAGHER, H.M., 1991:

The author traces a shift in the cataloging rules from the perfectionist to a pragmatic approach in Osborn's essay 'The Crisis in Cataloging'. In it Osborn discussed four major issues: (1) change from bibliographic to descriptive cataloging, (2) importance of sufficiency of a general rule, (3) replacement of the concept of truth from absolute to contextual, and (4) introduction of pragmatic evaluation based on the consequences of action, rejecting idealism of cataloging as an end in itself.

"For the American Pragmatist laws and theories are not affirmations of truth of the world, but rather are how some of our beliefs are related to others as conditionally organized consequences and expectations - they are rules of inference or guiding principles for actions." (p.24)

The shift in cataloging was from "doing their tasks well, to considering how well their tasks contribute to the ends and purposes of the library." (p.25)

GALVIN, THOMAS J., 1975:

The problem oriented approach in library education is based on nine major assumptions about librarianship as a professional field:

(1) Librarianship is an applied discipline, combining the scientific principles and the art of applying them. (2) It is an emerging discipline lacking generalizable knowledge. (3) As a dynamic field, it is subject to rapid growth, changing social needs and new technologies; library education ought to focus on principles and processes rather than on the transmission of actual information. (4) It is an eclectic and interdisciplinary field based on the synthesis of knowledge developed in other disciplines. (5) Librarianship is a profession rather than a technical field, hence librarians must be able to adapt to new demands by utilizing existing principles, concepts, technologies and skills. (6) Decision-making processes are important in library practice. (7) Operating in institutional and organizational setting, librarians need human and technical skills. (8) Librarians must be involved in a continuous self-learning education. (9) The issues in library administration and supervision are similar to those in other fields.

---- 1984:

Information science rests on a belief that information is important for systematic study. A common goal for all scientific research is to describe natural phenomena in precise terms. Similarly in programming a computer a human process of classifying, storing, combining and retrieving information must be described precisely.

New science of information combines an understanding of information technology with the scientific study of human behavior in its information-seeking and processing mode. Among the issues that information science addresses are: nature of information: distinction of information from sensory data, processes of transferring information from one individual to another, their description and measure, influences of the medium transferring the information; study of how human minds gather, process, store and retrieve information, and replication of human processing in a machine.

The following are the types of systematic investigation in information science.

(1) Information technology is a study of a commonality between information and computer sciences, man-machine interface and design of electronic systems, computer simulation and modeling.

(2) Research centered on the behavioral and cognitive aspects of human information processing, describes the processes human use in formulating, pursuing and satisfying information needs. We witness development of a new library social mission from document delivery to effective information transfer.

(3) Sociology of information, the economics of information and information law and policy, include international and comparative studies in the library and information science as culture-sensitive and culture-free. Thus information science in

its several interrelated dimensions (technological, behavioral, economic and sociological) has important implications and relevance to librarianship.

GARDNER, F.M., 1964:

The author discusses two views of library purposes: (1) as a tool for information knowledge, which includes organizing collections, subject bibliography and librarians serving as a specialist. (2) In a library as a social service, librarians serve not only as collectors and organizers of books but also as readers of books, responsible to readers but also to their authors. Librarianship has a social purposes of contributing to the improvement of the citizens. The library is in war with 'poverty of mind', and the librarian is a 'missionary of value of books and libraries'

GARDNER, FRANK M., 1973:

The aims of the public library are: (a) contribution to sustaining educational, economic, industrial, scientific and cultural quality of life: and (b) promotion of the concept of democratic society.

The public library objectives include: education (supplementing formal education), information (as a referral to specialized information), culture (promotion of cultural events) and leisure (to individuals and special groups).

"The real danger in ignoring the needs of the user . . . lies in identifying the purpose for which the material is used with the material itself." (p. 211). Quoting L.R. McColvin: "Quality is more important than quantity . . . but the librarian must avoid betraying his own ideals of freedom by attempting to assert his own ideas and values." (Ibid.).

GARFIELD, E. 1973:

A network diagram of citational relationships can constitute a reliable 'outline' for writing a history of a field. A historiograph is a graphic display of citation data that shows the key scientific events, their chronology, interrelationships and their relative importance. It is a tool, compiled manually or automatically. Using a bibliography as an input, a librarian can print citations from which he can identify key papers. This tool is called Science Citation Index.

The first historian of information science was George Sarton who found ISIS. His main concern was a precise chronological reconstruction of events, analyzing and interpreting cause-effect relations.

In 1922 E.W. Hulme used the 'statistical bibliography', a description of the history of science and technology by counting documents. Pritchard used 'bibliometrics' to describe the quantitative analysis of citations (called by Russian scientometrics).

---- 1987:

The significance of information in the society is illustrated by its impact on the following issues: (a) right information at the right moment; (b) information-rich environment contribution to new ideas, (c) shift of economy from industrial production to information-based goods and services, (d) revolution in financial markets (availability of instant financial information), (e) new social and ethical questions arising from the information age (information can be used for good or misused for evil), (f) issues of privacy, and (g) the study of information itself (how to improve its effectiveness).

GARRISON, GRETHEN J., 1934:

There is a need for new citizenship awareness of the world as a whole, and understanding issues such as causes of international conflicts, world economic conditions, overpopulation, propaganda, secret diplomacy and human ignorance. "Knowledge is power . . . man who knows . . . is less easily duped by falsehood, misinterpretations and confused half-truths." (p. 20) "Public libraries are the laboratories of enlightened world-mindedness." (p. 31)

GARRISON, Guy, 1988:

Library schools incorporate information content into existing disciplines instead of developing interdisciplinary programs free of allegiance to other disciplines, technologies or applications. Few schools recognized philosophical and practical necessity for providing several tracks within the information programs and institutionalized setting.

Information science programs that developed since 1960s reflect transition from an era of information interested in documentation within an institutional framework to an era of information exchange in de-institutionalized setting.

In the past the challenge was to incorporate into library science curriculum documentalists (1940s), audiovisual specialists (1950s), information science (1960s), information system and resource management (1970s and 1980s).

Since US has no central planning organization, the future of the curriculum will be determined by free market. Presently each discipline considers information as extension of established field. Some people maintain that the opportunity to incorporate information into library discipline was lost, leaving the librarianship the territory that nobody else wants.

Interdisciplinary research must focus not on information technology per se but on information content, transfer, and interactions of users with information systems of all kinds. If this window of opportunity is not taken advantage of, library and information science education will have a problematic future.

GARVEY, WILLIAM D., 1979:

Interactive communication is an important aspect of science considered as a social system. Librarians will provide better service to the scientists if they understand the information users they serve. Information needs of each individual scientist may differ reflecting different kinds of scientists and constantly changing information needs. Librarians ought to be aware of information-exchange activities of each scientist they serve. "The ultimate function of a sophisticated data bank would be to become part of the scientific process itself - to anticipate scientists' information needs; to disseminate information created by the scientists in the community being served to other scientists outside the community on whom it would be predicted to have a significant impact: and even to generate information such as synthesis as a result of analyzing information flow and use." (p. 120)

GATES JEAN KEY, 1976:

The author provides basic historical definitions of the library, librarian and librarianship.

(a) 'Library': is a term used in England since 1374, as a place for reference, study and service. In 19th century the definition was expanded by adding library building and its collection, considered the library as an institution. The library is the only social agency devoted solely to the purpose of collecting, preserving, making available, transmitting, and securing effective use of the records of civilization.

(b) 'Librarian': The term evolved from watching and guarding the books by their keeper to a bibliographic specialist and library administrator, trained in library science. The term does not distinguish between the profession (librarianship) and its members (librarian).

(c) 'Librarianship': the suffix '-ship' denotes conditions, office or profession, defining librarianship as the office, duties or profession of librarianship. Basic elements of librarianship are accumulation of knowledge and experiences of the society to the individual patron and its continuous transmission through graphic records such as books (Butler). Carl White added the concept of power to retain, organize and use the accumulated heritage of all humankind in all forms.

---- 1990:

"A major function of librarianship has always been to organize whatever type of material have been available at the time; to recover, find, or retrieve information and knowledge from these materials: and utilizing any and all available methods, to transmit them in some usable form to those needed or requesting them." (p.203) "When librarianship was not ready or able to satisfy all the additional needs involved in managing the tremendous volume of information, a new discipline began to emerge. " (Ibid.).

The basic objectives of librarianship and information science are the same. Major differences are in the techniques used, especially computers and in the interdisciplinarity of information science, independent of any particular environment, while librarianship is associated with specific institution.

Computer science focuses on computer programming, data processing and applied mathematics. Information science concentrates on the nature, generation, organization, processing, distribution of information, and on solving its problems. Information activities include traditional library functions of collecting, classifying, recording, storing, bibliographic and physical access to information thru reference services, bibliographic and online search, interpreting, analyzing, evaluating, translating, abstracting, indexing, and teaching library techniques. More recently information activities also include creating, developing and marketing information products.

GELL, MARILYN KILLEBREW, 1979:

"Librarians have always defined their mission in heroic terms and proclaimed it with an almost religious fervor . . . to promote enlightened citizenship and to enrich personal life." (p.171) "From an institution with rather general educational, cultural and recreational aims . . . the library will . . . become a part of our essential machinery for dealing with these concerns." (Ibid.)

"Libraries are more than purveyors of information and distributors of books. They are also a symbol of social order." (p.172) "They are the custodians of value. This role is one that is assumed by no other institution." (Ibid.)

The major paradox is "the discrepancy between the social justification which has been the library creed and the actual use made of libraries which consists largely of the delivery of recreational reading to the middle class." (p.171).

---- 1981:

"Information does not behave like other products. It is characterized by simultaneity of ownership, difficulty in exclusion and nondepletability." (p.833) It "can be sold and retained at the same time; it is difficult to keep people from using it; and the supply is not exhausted no matter how many times it is sold."(ibid.) It "doesn't fit the traditional supply and demand curve of any of the economic theorists." (Ibid.)

GERACI. D. and L. LANGSCHIED, 1991:

A distinction is made between social. scientific. humanistic and mainstream data, their meaning and uses. The author describes the skills needed to integrate the data services into the organization served by the library.

GERARD, D.E.. 1959:

Librarianship is primarily sociology, secondly a bibliography. The library is the largest department of education in the world. The basic question is what libraries can do to help people help themselves?

---- 1963:

Criticizes McClelland's call for neutrality. McClellan assumes that the provision of informational material by itself is sufficient to respond to the changing environment. Although librarianship developed methodology it is behind in keeping up with the new purposes. The public library cannot be isolated from changing social environment represented among others by commercial motives and tastes of non-educated part of the society. "It is not enough to start a career in libraries with a vague feeling that books are good thing, but that the essential collaborative act between humans is brought about through literature. We are its keepers and its centre." (p. 27)

The 19th century ideal of self-help and mass enlightenment is replaced by giving patrons what they want, responding to "crude, semi-literate requests for more and more of worse and worse . . . [trying to make] what was good popular, and what was popular, good." (p. 28)

Living in the 'Age of Permissiveness" librarians struggle with the concept of freedom of action of the patron not as an individual but as a customer, with new censorship's maxim: 'what sells goes'.

"The reductio ad profanum, the narrowing of the taste has reached the limit. We don't want to be passive assistants in the process, but rather active opponents. We are a cause - the cause of liberation of values, rescuing values from their present imprisonment" (p.30)

---- 1975:

The author discusses the relationships between fiction in literature, representing the world of imagination and leisure, and the librarian's responsibility as 'the public servant'. The book lost its authority and is facing a competition from other forms of recording thoughts, characterized by the shift from the 'word' to an image. This requires librarians to learn the meaning and impact of new symbols on the traditional concept of literacy.

---- 1978:

Historically the early modern period of a public library began in the last half of the 19th century with opening of libraries to public, expressing liberal Benthamite doctrine and J.S.Mill philosophy of self-help, and philanthropy without state intervention.

There is little evidence of equivalent searching or social analysis in academic libraries. Special libraries are considered separate, relating directly to information science concern with technical rather than social issues.

The meaning of the concept of the library shifted from fixed location and exclusiveness into global dimensions of service, aided by telecommunication.

In the West libraries are the products of humanist culture, the focus is however changing to technology.

Libraries become laboratories of social change (e.g., adult literacy, services to minorities and underprivileged) getting closer to a political arena, thus negating the old neutralist stand. The question now is 'what kind of politics?' and how it relates to book selection. The politics are more radical and libraries are meeting new competition by offering broker's services and focusing on personal needs of the client.

---- 1983.

This is a critical review of the position on reading, which reflects the paucity of research on difficult, subjective reading habits. It is truisms rather than truths to state that reading is unique, and unrepeatable, that each reading of the same material is different, and that the emerging meaning is expressing books' and its reader's views.

Nikolas Rubakin's extreme Benthamite view is criticized for measuring readers' emotional responses statistically; 'the volume and nature of images' "add nothing whatsoever to our understanding of the silent transactions between reader and writer." (p. 290)

GERHARD, KRISTIN H., 1991:

The author discusses the criteria to be used in the selection of detective fiction. "Demand alone does not seem a useful criterion in building enduring, high quality collection." (p.49) "Detective stories must be judged in terms of what they intend to accomplish within their genre . . . how well a work meets the requirements of the form, and what unique contribution it makes." (Ibid.)

GETZELS, JACOB W., 1957:

The radical shift in the general concepts of values in our society, makes identification of learning values difficult. A lack of definitional uniformity creates a dilemma of providing simultaneously for wisdom, demands of a marketplace and for the individual patrons needs.

The library must face these complexities of shifting values and provide to its readers models for identification and growth, consistent with readers' own personality and the sacred and secular values of his society.

GILCHRIST, ALAN, 1982:

The term 'scientist' in the expression 'information scientist' is there because the originators of information science were scientists exchanging information with other scientists. "These roots in the disciplined world of science should not close our eyes to the fact that the practice of information science is highly subjective. Bibliographic information retrieval in a process which attempts to maximize the probability of recalling relevant documents . . . [is] a subjective process." (p.1)

GILCHRIST, ALAN, 1986:

The emergence of information science is briefly traced to (a) the invention of printing, (b) works of Pascal, Leibnitz and Babbage (17th-19th century), (c) 17th century revolution in science (d) introduction of learned journals and accountancy profession (Late 18th c.) (e) Industrial Revolution, (f) introduction of abstracting journals (early 19th c.) and in this century (g) emergence of special libraries, and professional organizations of information scientists.

Today's information market consists of communication experts, data processing managers, librarians, system analysts, information scientists, marketing personnel, record managers and computer scientists.

Popper's described information field in his World 1 (material), World 2 (mind's product) and World 3 (results of material-mind interaction). W2 is a mental analogue of all in W1 & W3 (the whole cultural heritage), with information covering all manifestations of W3

Models of information are described in terms of relationships between the originator of information, its receiver, its intermediary (librarian) and the processor (repackagers of information). The intermediaries are: (a) discipline-oriented librarians imposing order, (b) mission-oriented information specialist's providing analysis and synthesis, and (c) problem oriented subject experts offering interpretation and advice. The major distinction is however between service providers and system management.

GIULIANO, VINCENT E., 1969:

Librarianship is compared to medicine, distinguishing between professional staff (physicians-librarians) and nonprofessional (hospital and library administrative assistants). Instead of associating librarianship with institution ( as 'hospitalitarianship') librarianship should be defined in terms of its function as that of knowledge transfer (corresponding in medicine to the prevention and curing of diseases).

The traditional functions of librarianship have been concerned with the application of only a narrow collection of highly institutionalized technologies and procedures that carry these functions. As medical scientists do not have to be medical practitioners, so the information scientists do not have to be librarians.

GLAZER, NATHAN, 1959:

Urbanization dramatically changed library relation to the urban community. In 1930s the public library reflected the age of immigration, upward movement, primacy of a book as means of communication, solid architecture, bound books and no dust jackets. Libraries were centers for self-improvement. The financial support of libraries by state and community agencies was greater, while today, although reacher, we spend less on libraries than on city parks.

A shift from public to institutional libraries is indicated by increased publishing efficiency improved access to books with new distribution through a supermarket, mass circulation of magazines, and influence of TV. The library lost its architectural monumentality. Its function changes from local, self-directed to bureaucratic type of services, focusing on technology and change in the urban environment itself. Population dispersion made a library less accessible.

The concept of efficient service is important but it may underestimate the significance of much less efficient yet valuable one-to-one services, and the provision of a library environment that allows the patron, especially in urban communities, to be alone with a book.

"The need to serve is admirable. But the need to serve also creates certain distortions; for example, in its drive for efficiency and usefulness it tends to ignore the importance of the inefficient and unusable - the book that is rarely or never borrowed (but if it is of value it will be someday), or the space that merely exists as space, with the wonderful psychological effect space can have." (p.80)

"The important thing is the setting for a special kind of experience - being alone with a book." (p.79) "In the American urban texture there is no place to hide, or, more positively put, no place to be alone in a productive and restorative way." (Ibid.)

GLEAVES, EDWIN S., 1982:

The 1980s are characterized by the dominance of electronic technology and its applications in information science, development of network communication, expanded data storage facilities and computer-based bibliographic system.

The major issue is whether librarianship as a generic term, is big enough to encompass the expanding concepts of information science and information management, both contributing to the theoretical and intellectual base for librarian's operations.

GLEICK, JAMES. 1987:

Twentieth-century science will be remembered for just three things: relativity, quantum mechanics and chaos. Chaos becomes a global science of the process of becoming rather than a science of the state of being: "Relativity eliminated Newtonian illusion of absolute space and time; quantum theory eliminated the Newtonian dream of a controllable measurement process; and chaos eliminates the Laplacian fantasy of deterministic predictability." (p.6)

Information allows for fantastic juxtapositions and leaps of imagination. There is no library of forms and ideas against which to compare the images of perception: it is a function of brain to find order in that chaos.

In Shannon's information theory, 'information' stands not for ideas concepts, events, numbers or words. It is a value-free term without any connotation of facts, learning, wisdom, understanding or enlightenment. But it can be measured, transmitted over communication channels, and used to test transmission for accuracy. The shape of the theory is determined by the hardware, with bits becoming basic measure of information. The theory provides for a study of how noise in the form of random errors interfere with a flow of bits, predicting capacity of communication lines.

Information concept relates to the notion of 'redundancy'. The ordinary language contains over 50% redundancy in the form of letters that do not necessary convey a message. Part of the redundancy in ordinary language lies in a hard to quantify meaning, since it depends on the degree of knowledge of the language. The stream of data in the language is less than random: each new bit is partly constrained by the bits before, thus each new bit carries less than a bit' worth of real information. Hence a paradox: the more random a data stream, the more information would be conveyed by each new bit.

The concept of entropy is an adjunct to the second law of thermodynamics, expressing a tendency of any isolated system to slid toward a state of increasing disorder. Entropy is the name for the quality of systems that increases under the Second Law - mixing, disorder and randomness. Strange attractors conflate order and disorder and gave a twist to the question of measuring a system's entropy. They serve as efficient mixers, creating unpredictability, raising entropy, and thus creating new information.

Energy in natural systems exists on two levels: the macroscales, where everyday objects can be counted and measured, and the microscales, where countless atoms swim in random motion, unmeasurable, except as an average entity or temperature. The scales do not communicate with each other, but the chaotic systems bridge the gap between these two scales, thus creating information by the virtue of its unpredictability; each new observation is a new bit. The information is transmitted from one scale to another, with a strange attractor as a channel transmitting that information, magnifying the initial randomness just as the Butterfly Effect magnifies small uncertainties into large scale weather patterns.

Billions of years ago there were just blobs of protoplasm with the information created and stored in the world structure; so in a development of each person's mind information is not just accumulated but also generated (created) from the connections that were not there before.

Robert Shaw study of the behavior of water dripping from the faucet, illustrated the fact that an order is so ingrained in apparent disorder that it would find a way to express itself, thus distinguishing between mere noise interference and chaos as an orderly disorder created by simple processes.

In 1980s chaos brought to life new kind of physiology based on an idea that mathematics could help scientists understand global complexities independent of local detail, recognizing the body as a place of motion and oscillation. The newly recognized rhythms were invisible on a microscope slide, but added meaning to the interpretation of irregular heartbeat in cardiology, leading to a concept of 'dynamical diseases' manifested by disorders of systems, breakdowns in coordination and control or irregular oscillations. (pp. 255-62, passim)

GLOSSOP, MIKE, 1978:

Librarianship reasserts its concern about individual by its interest in the theories represented by Human Relations School, theories on social interaction and group dynamic, participative management, subject specialization, and user education.

Study of communication is the central library concern involving reader-library-information interactions.

Knowledge about libraries is fundamentally social, raising epistemological issue of emulating scientific tradition of natural sciences by diverting the attention from the fundamental questions of librarianship to more centralized, bureaucratic concerns such as mechanistic dehumanization and formalization as illustrated by statistical data.

The importance of subjective knowledge was recognized by Husserl who provided impetus for the non-quantitative or qualitative tradition in phenomenological movement.

Phenomenology means the study of appearance, illustrated by Kant's distinction between things as they are perceived and as they actually are. This is the antitheses of Comte's positivism considering all phenomena subjected to invariable natural laws.

It was this association of positivism with a primitive reductionism that leads phenomenologists like Husserl to reject the scientific method as inadequate to explain social phenomena. In contrast to positivism, phenomenology insists that experiences (particularly personal experiences) are the main objects of philosophical inquiry. Facts and objects cannot exist independently of man's consciousness. Phenomenological sociology does not focus on the subject with the exclusion of the object, but is concerned with the dialectic of perceiving subject and his experience of the objectiveness of social reality through communication and understanding. The problem is the understanding of the subjective logic of the social situation.

Phenomenological methodology involves a suspension of presuppositions about situations or events, with beliefs, theories and preconceptions considered as topics in their own right, that are critically analyzed, free of bias and prejudgement.

Phenomenological action research rejects rigid behaviorism by emphasizing the importance of subjective meaning attached to a situation by an individual and evaluated in terms of that individual's values. It provides not a theory of organization but a method of analyzing social relations. It is an applied research searching for the most effective means for bringing desired change in which knowledge become a component of action.

Scientific research stresses that all phenomena are reducible, the phenomenology is concerned with totalities but is criticized for its subjectivity and lack of comparative criteria.

The relevance of phenomenology to librarianship relates to: (a) study of a library as an organization, and (b) as a suborganization of the community. In this approach information is viewed as a derived demand, not as a commodity demanded for its own sake. The approach will affect collection of data, interviews or participant observations, radically departing from traditional library research.

Traditional librarianship is criticized for its obsession with means rather than ends (doing it right rather than doing the right thing), and for avoiding complex social issues (insensitivity to local or special situations, rejected in the name of objectivity of service). Value judgements are made on the basis of existing operations assuming that the system is already optimized.

Library research must adopt the epistemological focus on the study of man rather than things, by redefining the subject-object relations, and by concentrating on concern and care, rather than simple objectivity.

GOFFMAN, W., 1973:

Information science is concerned with the study of the principles underlying communication processes and information systems. A communication process is a sequence of events resulting in the transmission of information from one object (source) to another (destination) by means of a system. The function of information system is to carry the communication process. Information retrieval process is an instrument for providing effective contact between the source and destination within a communication system.

A system can be defined as a collection of elements interacting in the performance of some function for some purpose; the elements of a system may consists of either tangible things or intangible operations. The purpose of a system is associated with the requirements placed upon it by its users, while its function deals with procedures employed by the system for satisfying these requirements. It is essential that a system has both a purpose and a function, its evaluation depends on both.

The function of an information retrieval system is to carry out an information retrieval process, i.e., to put users and information together (e.g., telephone system connects people but is not responsible for information conveyed, while the user of information retrieval system requires that the contact lead to a specific transmission of relevant information).

GOLDHOR HERBERT, 1942:

The author describes an evolving general theory of book selection based on literary criteria and reading needs that are determined by sociological and psychological studies of what happened when people read.

Three factors are considered: (1) reader (his previous social environment), (2) publication (content and style) and (3) the goal (sought by the act of reading that reflects the reader's personal wants, as stimulated by his social environment). The success of the selection is determined by the degree of similarity between the goals and effects of reading.

The concept of 'the economic reader' is based on a profile of average readers; their reading habits and preferences for borrowing books from a library, a friend or by buying them from a bookstore. The selection of material differs between individual and institutional approaches because of a variety of reading purposes. Public library selection aims at: (1) a well-rounded collection, (something on everything, determined by the material published, previous circulation and expected needs of registered customers), and (2) selection based on a type of reader to be served (a right book to a right reader at a right time), reflecting reader's predisposition, availability of material, and library objectives.

Most people read to reinforce their views or for relaxation, hence major public library objectives aim at information, education and recreation. However, educational objectives are not based on specific needs but on past circulation: a library provides material without any specific educational goals because it is not responsible for the reading impact on the reader.

Library objectives must be clear and based on the knowledge of readers psycho-sociological needs, on the socio-economic profile of reader-as-a-group predisposition and on the scope of publishing activities. Selection aims at the general reader profile, trying not to duplicate material available elsewhere.

GOMEZ, M.N.G., 1990:

The author recommends replacing the qualitative specification of information facts by 'point of view' approach that relates better to the interdisciplinary of the field. The recommendation is made on the assumption that the value of information depends on the relationships between the pragmatic interpretation of information in a theoretical context (meta-information) and its actual social environment.

GOODE, WILLIAM J., 1961:

The professional status of librarians requires that (1) the knowledge of librarianship be organized in abstract principles applicable to concrete problems; (2) new knowledge is created; and (3) all knowledge is controlled by the profession.

The knowledge base of librarianship as 'specialization in generalism' is insufficient. Librarians' function to 'reduce the anonymity of books' is not backed up by scientific knowledge. The subject specialist usually knows better than the librarian how to find the material in his own field, and he considers librarians' knowledge in other fields as irrelevant.

The librarian's obligation to give the reader what he wants weakens his professional autonomy and is in contrast with the ethical code of scientists' dedication to knowledge. In this context, the concept of professional neutrality is not acceptable, since the librarian facilitates the accomplishment of the values of others, the individual library patron, or library public in general. "The Golden Mean, as Max Weber remarked long ago, is not necessarily more correct that either extreme." (p.20) Hence, the repeated calls for "a philosophy of librarianship essentially express the need to define what is the intellectual problem of the Profession." (p. 13).

GORE, DANIEL, 1967:

Libraries are poorly managed, with more money spend on personnel than on books, inefficient operations and library schools perpetuating the status quo.

The competent college librarian should be a scholar and a teacher, a capable supervisor and one who 'enjoy the society of scholars.' "Excellent libraries can be excellently managed by men of letters who had no formal training in librarianship." (p. 94)

---- 1969:

"If American librarianship has any substantial philosophical foundation . . . then the rock upon which that foundation rests must be an immovable opposition to censorship activities in American libraries." (p.200)

The library must "be perfectly neutral mirror of the universe, a faithful reflector not only of the good, but of the ills that is in it too."(Ibid.) "The only possible alternative to this ideal of neutrality is a library that is in some way an instrument of dogma, something devised to . . . disguise it." (Ibid.)

This approach is necessary in a pluralistic society: the principle of freedom from censorship in librarianship is comparable to the principle of academic freedom in classroom teaching.

The author proposes the doctrine of absolute negative authority, the policy allowing the patrons or library staff to overrule any clearly stated objections to a particular book.

---- 1970

Some philosophers feared written words and books; among them Socrates considered written words useless. Plato condemned writing in Phaedrus, and Ortega y Gasset called for librarians to regulate the production of books.

Librarians should follow the Sceptic formula of suspending their judgment. Sextus identified three kinds of philosophers: (1) the dogmatists believing in the existence of truth, (2) those who deny the possibility of knowing the truth, and (3) the Sceptics, the 'searchers'. The Sceptic "through suspension of judgment on nonevident matters, . . . achieved the mental tranquility that permitted him to function sensibly according to the laws, customs, and faith of his people - and to continue his philosophical inquiries." (p.956)

"We must have a philosophy for our mission that can accommodate all dogmas by assenting to none. The name of that philosophy is Skepticism."(Ibid.)

Some critics of this essay commented that: (a) Ortega y Gasset's call for the organization of recorded information was distorted by Gore (A.B.Lemke). (b) Skepticism may be a perfect foundation for a philosophy of librarianship but not for individual librarians (D. Hollenberg). (c) Jacques Maritain expressed another view on tolerance, stressing the importance of having strong convictions but also respect for the convictions of others (J.B.Black), and (d) the belief that Gore's article expresses the views of most academic librarians (A.W. Stewart).

---- 1973:

This is an expansion of the author's essay on skepticism (1970). Plato opposed intellectual freedom as we understand it, by advocating government censorship. Jose y Ortega in the Spanish version of 'The Mission of the Librarian' (1935), which was omitted in his speech and its translation, extended to librarianship the Platonic position about books (J.Ortega y

Gasset, 1935a)." As Ortega sees it, a library ought to be, principally an office of government censorship." (p. 135)

The mission of the librarian is the making of libraries, not allowing others to do it for him. "A problem universe requires problem libraries. Making them is the most demanding and the most awkward necessity of the librarian's mission, since in the nature of things libraries must contain many books that offend our neighbors and ourselves." (pp. 140-41)

---- 1981:

The author argues for a 'no-growth' library collection, expressed in "the theoretical model of an academic library that does not grow in size, although its contents change from year to year in response to changing reader demand." (p.2185) "The probability of patrons finding in it the books they want will be twice as great as it is in the traditional, evergrowing library." (Ibid.) The right size collection is determined by low number of unused books and small number of complains about lack of specific titles.

---- 1982:

Gore suggests that the Ortega y Gasset's call for regulation of book production by librarians can be met by resource sharing. "The kind of book that goes out on interloan should be typically in such low demand at the lending library that it will be glad to give it to the borrowing library." (p.1378) "The fact that the book is actually wanted at the borrowing library is the strongest possible statistical indicator that the next use of the book (if any) is most likely to occur in the borrowing library - which should . . . hang on to that albatross until some other library offers to remove the burden via interloan." (Ibid.)

GORECKI, DANUTA M., 1976:

"Since its beginning during the Enlightenment, the history of Polish librarianship has been shaped by two forces: the cultural sophistication of the eighteenth century segment of the population, and Poland's geopolitical location and its consequences. The former stimulated private and public book-collection . . . [leading to the establishment] of an organized library network. The latter retarded this process by periodic destruction of Polish cultural institutions during the partitions . . . both world wars, and in the continuing post-World II period." (p.22)

Polish research on reading was influenced by (a) Russian, Nikolai Rubakin's theory of 'bibliopsychology', arguing that the meaning of the content of a book changes with each reader; and by (b) an opposing view of German, Walter Hofmann's 'socio-educational' approach, arguing for the existence of similarities among a group of readers in similar social and economic circumstances.

The author concludes that "libraries did develop admirably in a poor, uneducated, and relatively feudal society, surrounded since the eighteenth century with infinitely more powerful enemies: and that these libraries not only survived these social and political conditions, but were one of the forces which brought about considerable improvement in them." (p.22)

GORMAN, M.A., 1990:

Gorman criticizes library schools for their overemphasis on information science, appointment of the school faculty with no library background, and for equating paraprofessionals with professional librarians. This attitude undervalues librarianship and fails to provide education relevant to library needs.

GORN, SAUL, 1967:

'Computer and Information Sciences' (CIS) is a new discipline that focuses on interdependence of symbol systems and on the processes of interpreting them in terms of cybernetic pragmatism, which considers what can and cannot be mechanized.

CIS draws from engineering, mathematics, philosophy, psychology and linguistics. Specific disciplines affected by the new discipline include: (1) physics (pattern recognition), (2) chemistry (automatic translation between formula language and names of chemical compounds), (3) biology (genetic codes), (4) psychology (perception and pattern recognition), (5) linguistics (mechanized language translation, linguistic analysis and information retrieval), (6) arts (information content of sound), (7) networks (electrical, city planning), (8) law (reformulation of legal concepts), (9) library (indexes, thesauri, search strategies, information storage and retrieval), (10) medicine (automatic statistics for epidemiology, management, storage and retrieval of medical cases), (11) management (production control, decision processes), and (12) education (scheduling, programmed learning).

In the past focus has been on specialization of labor, now it is on generalization, since machine become more efficient than human in performing detailed, repetitive tasks.

Cybernetics includes any systems that contain communication and control subsystems, and maintain a balance between communication and control of the whole system and individuals in it.

The psychological development of individual must parallel the sociological development of the culture. Pragmatic consideration refers to relationships between symbols and their users or interpreters, either human or mechanical. The things, concepts, arts, and sciences, invented in the past have changed into great illusions. Idealism and materialism, mind and matter, idea and will, communication and control "are as absurd to live with as a world in which egg and chicken, each demand precedence." (p.441)

When general information expands the capacity of memory or the retrieval device, either the fission into subdomains, or fusion into more compact structure occurs, resulting in different levels of language restructuring and abstractions.

CIS components in other disciplines are described by the following principles.

(1) Ockham's razor principle in economics: deletion of all unnecessary hypotheses, stressing simplicity in esthetics, irredundancy in logic, and precise expressions in linguistics.

(2) Process in flow memory principles: cause and effects search for the first cause and for mechanisms of evolution.

(3) Stability, or steady-state principles: the communication-control balance in cybernetics, minimum distance principle in optics, and general relativity.

(4) The traffic pressure and density principles: laws for scattered models in biology, ecology and entropy.

(5) Laws concerned with transition behavior: a domain of paradoxes, antinomies and dualities (transitions from static to action states and vice versa).

(6) Growth principles: heuristic decision-making and goal-seeking procedures in social sciences, and arts.

(7) Need for less specialized courses in liberal arts, and more specialized courses in application of tools in other disciplines.

Professions are the transformers of information into action in human society, and should have the insights that enable practitioners to transfer knowledge into power, information into action, and communication into control. Here the value systems measuring efficiency in the substance or tools of communication are esthetic; the values measuring control or action are ethical. Each discipline has its own characteristic types of insights, and can be verbalized only by the philosophers of the discipline.

The study of CIS offers an insight into what is or what is not computable, what is and is not mechanizable. Without such an insight the citizens cannot make the ethical decision on what ought or ought not be mechanized.

---- 1983:

The purpose of this paper is to distinguish informatics from library science, information retrieval, information science, cybernetics, cognitive psychology, artificial intelligence, semiotics, linguistics, computer engineering, management, decision science, education and mathematics.

Informatics is concerned with the study, design and use of data structures and their transformation by mechanical means (machine amplifies symbol manipulations). It is empirical and experimental rather than formal discipline, modeling human symbolic behavior in heuristic searching and problem solving. (The theoretical side of informatics is called analysis of algorithms, together with its empirical side it is called the design of algorithms). It is included in cybernetics communication and control of symbolic systems by machine.

Ideology is a systematic body of concepts, a manner or the content of thinking, of an individual or his culture, also defined as assertions, theories and aims of a sociopolitical program.

Knowledge, is what we try to symbolize, when we communicate. It is not merely a relation between what is known and the knower, but a result of an attempt to communicate, involving community of knowers as well as what is known.

Definitions are rarely nominal or real, but are often reduced to experiential basis: the definition is not simply the presentation of a necessary and sufficient condition for recognizing a new concept, it is preceded by a special condition.

Basic assumption in action-oriented disciplines is free will, in empirical science it is determinism; the role of any professions is to transfer knowledge into action.

In order to retrieve relevant information one must understand the structure in which it is stored, by comparing ideology of the storer with the ideology of the purpose for which it is to be retrieved. This pragmatic dependence on the ideology of the subject also applies to library management and information retrieval.

Organization of the library will constantly change, hence its problems will never be solved; and the library profession will never be static enough to be mechanized. Librarians will experience degree of technical obsolescence. This however, will not affect the profession of librarianship since its main goals are not limited by technology used.

Computer science should not be separated from information science, but be considered part of the same discipline, the informatics. Otherwise it would become a metascience that would destroy important mixture of knowledge and action. Even nonpragmatists and extreme idealists such as Wright would agree that this would be a wrong way to go.

---- 1983a:

Gorn refers to 'mechanical pragmatism' or 'computer and information science' that shares in cognitive activities. The computer scientist deals with semantic interpretation of symbols, although not as a living reality, subject to natural and ethical laws.

The manipulation of symbols involves syntactic interpretation of notational systems with only sporadic use of mathematics or logic. Mathematical methods are used by theoretical informatics as applied mathematics.

Misuse of computers may lead to human disaster. There are many meanings of meaning; the author defines meaning as pragmatically symbolized objects. He disagrees with Kuhn that the mark of single discipline is a single paradigm, since single ideology can unite different approaches, before the paradigms are formulated. Paradigms are social decisions concerning a proper course of action for a given ideology.

GOUGH, CHET, 1972:

Many long established systems are considered to be a reality, while in fact they are mere human constructs subject to change. This implies that one can initiate a change within himself or his organization, and have impact on the environment.

"The librarian's role is in the organization and presentation of the knowledge we have accumulated so far. He can do this adequately only if he is in touch with the knowledge he is trying to organize. It is not possible to be aware of the possibilities unless the knowledge we have is coordinated, consolidated and synthesized This is one of the functions the librarian can perform. but he needs . . . to be willing to take the risk of presenting all the knowledge, not only that which is acceptable." (p. 152)

GOULD, SAMUEL B., 1965:

The basic goal of the library is the provision of service to the greatest number of people. Our present civilization resembles ancient Greek period in which citizens were involved in intellectual matters while slaves performed all mundane tasks, with today's machine rather than slaves providing more leisure time.

In the library perceived as the core of community, librarians can provide leadership in recreation and continuing education by developing reading habits, keeping community informed and by providing material on issues of interest to the patrons.

The library as the core of conscience has a mission of creating and nurturing a respect for individual, by preserving individual dignity, offering its patrons "not only a sanctuary where man may thing and learn and refresh his soul, but a constant reminder to him that he can use all that mankind has thought, accomplished, won, or been." (p.3996)

GOVAN, JAMES F., 1988:

Privatization is a process of turning over public functions to private industry, claiming that it is more efficient, less expensive and provides a better service.

Such change no longer maintains a balance between quality and solvency but it seeks to enhance profit (e.g., publishing industry's interest expressed in best sellers at expense of quality, or in government a shift from informing the public to economic considerations, allowing private business to profit from publishing government information).

Librarians are now expected to make profit, by considering information as saleable commodity. The change started with budgetary considerations, by passing vendor charges to the client, and instituting charges for ILL, network and online search, thus moving libraries closer to business world, and advocating openly privatization of our profession.

"The issue is one of professional values and priorities. Instead of entering the business world, librarians should turn their thoughts and energies to preserving the established values of their profession in the electronic age . . . safeguarding access against economic pressures, not adding their own charges to public sots of information and learning." (p. 38)

GRASBERGER, FRANZ, 1952:

The library as an institution has a very long, unchanged tradition of collecting, classifying,preserving and rending useful its collections. Throughout ages ways of accomplishing these goals changed dramatically by increased diversity of material, changing modes of thinking, and of library users. Public and educational libraries focused on serving its patrons needs, the scholarly libraries concentrated on specific subjects and preservation of intellectual values.

In its eighty years of existence library profession witnessed a shift from the scholar's own library to the larger scholarly library, gradually changing the image of a librarian from an intellectual scholar to manager.

The term 'library science' (Bibliotekswissenschaft) was introduced by Martin Schrettinger in early 19th century, who defined it as a practical knowledge of library processes and management. Similarly, Goethe considered library administration as a prerequisite to other activities. Georg Leyh in 1940 defined library science not in terms of its substance, but as a contiguity of separate disciplines united by an accidental common denominator, a book. The discipline "lacks the common intellectual seeds from which any science must grow." (p.38)

Joachim Kirchner in 1951 differentiated between historico-philological research and practical organization of library collections.

The lack of balance between the external (administrative) and internal (scholarly) meaning of librarianship weakens the perception of the essence of the discipline. Modern emphasis on library organization depersonalizes its operations, creating a disparity between mechanical processes and individuals' inner needs of satisfaction from work performed. This problem can be resolved by developing syntheses of library theory (scholarship) and practice (management).

The major goal of librarianship is not the size of the collection, but its careful selection, "a responsibility which can be discharged only by librarians who have the opportunity to follow the progress of knowledge and of literary production." (p.45)

GRAY, EDWARD, 1986:

The author maintains that Plato was against writing, because it offered information without discourse. He quotes the dialogue in Phaedrus " you offer your pupils the appearance of wisdom, not the true wisdom for they will read many things without instruction and will therefore seem to know many things, when they are for the most part ignorant." (p. 41)

The quote is interpreted as saying that instruction must precede reading, "a simple truth: verbal instruction comes first and the written become a remembrance of it." (Ibid.)

The same approach is practiced today: the pre-school education involves a verbal discourse and verbal education provides a foundation for intellectual development. However, the amount of things to be remembered increased dramatically since Plato, requiring that verbal teaching be supplemented by the skill of finding and retrieving relevant information in the vast cultural storage of knowledge.

"Thus the long-term changes have not so much occurred in the function of discourse or writing, but rather in the way of ensuring that the latter . . . remains still accessible to us. And this . . . should actually be one of the major goals of PLs." [i.e., a public library]. (pp.41-2)

GRAZIANO, EUGENE EDWARD, 1955:

Library classification of records involves logical systematization of books' content, based on metaphysical theories of reality and knowledge. Dewey's classification schedule accepted main subject headings from William Harris classification system. Harris's main subject classes were in turn, 'inverted' categories of Francis Bacon's classification of knowledge, while his subject divisions were based on Hegelian philosophy.

"Only the logic of Hegel can account for Harris' basic Subject Classes and Divisions. No other philosophy except that of the ancient Greeks could underline his classification schedule." (p.62) "It is unthinkable that either Harris or Dewey could have developed independently a logic identical with that of Hegel." (Ibid.)

---- 1967:

""Library automation is symptomatic of a radically changing civilization in which operationalism is displacing logical thinking. Library operations are being reformulated as systems of process rather than of function. One of the consequences is that the profession of librarianship is being redefined." (p. 403)

Logical positivistic operationalism invalidates logic and reason as irrelevant, validating only non-functional, machines manipulated acts. The Library functions are abstractions of actions common to individuals with the similar interests formalized from their behavior. Computers 'dehumanize' librarianship by changing the mode of librarians thinking from logical to operational, shifting from man-centered to machine-centered approach.

---- 1975:

Many library functions can be reintegrated in the language-operational gestalt which expresses "what cannot be expressed by using English." (p. xiv)

Following the Hegelian notion that all fundamental questions relate to the definition of the identity of the entity being considered, Graziano poses a number of questions about the meaning of basic concepts in librarianship, such as: what is the book, a library, its function, information, or information science. These questions cannot be answered within the language-operational convention. Hence, Graziano calls for a reexamination of the fundamental premises of library science based on conventional language-operational habits, to be replaced by language-operational Gestalt.

Epistemologically, each library contains some Gestalt of universal knowledge, differentiated into various types of library records. Both the form and the content of librarianship are cross-disciplinary, analytical and integrative, considered as analogs of the 'real world'.

The proposed approach of language-operational-gestalt awareness is "a self-destruct trip': for closure of the gestalt it constitutes is identical with obtaining freedom from the tyranny of language, logic, and reason, and therefore from compulsions to philosophize away all of the cobwebs and delusions that have emanated from so many specifics of poor grammatical usage." (p 449)

GREEN, LOUIS V., 1991:

The author notes similarities between the fields of broadcasting and librarianship in questioning fundamental assumptions about role, purpose, organization, structure and source of finances of each discipline. Both disciplines are in a state of transition from a trusteeship model of service, in which scare assets are held in trust on behalf of a society served, and a more market-centered model. Both serve pluralistic viewpoints by providing access to a wide variety of interest and ideas. However, librarians have much less political pull than the broadcasters.

The lesson drawn from the comparison points to a need for improved evaluation of libraries' customer preferences, less defensive attitude about librarians services, and a need for more 'politicizing' their concerns, especially in the area of freedom of information.

GREEN REBECCA 1991:

"This study establishes three predominant cognitive models of information and the information transfer process . . . based on linguistic analysis of phrases incorporating the word 'information'" (p.130): (1) the direct communication (DC), and (2) indirect communication (IC), both assuming the perspective of the information system, and (3) the information-seeking (IS) model that takes the viewpoint of the information user.

The author concludes that since DC and IC models are based on weak empirical data, and the IC model emphasizes the information system, "the field lacks a coherent model of information transfer per se and that our model of information retrieval is mechanistic, oblivious to the cognitive models of end users." (Ibid.)

It is important to understand human interaction with recorded knowledge that results in changing cognitive understanding. This requires change in the language describing our field, by focusing more on the learning and knowledge than on the information retrieval.

GREEN, SAMUEL S., 1876:

In a public library both unlearned patrons and scholars receive assistance. Some of it is provided by catalogs, which however require instruction in their use and assistance in selecting a right book. Important is the avoidance by librarian of propagating any particular views.

GREER, ROGER C., 1987:

Following definitions of some concepts related to the information science, the author describes a conceptual model for the discipline. Knowledge is defined as an awareness of reality, information as recorded knowledge and data as unprocessed symbols. Communication consists of sender, message, medium and receiver, with a message recorded and received through information transfer. Information science provides a theoretical base for information professionals.

All information processes are characterized by a common core: (1) information engineering (design of a system that identifies, evaluate, select, acquire, organize, retrieve, repackage disseminate and discard data); (2) information organization management (defines the mission, assesses information needs and develops policies and procedure); (3) information psychology (behavioral processes related to information awareness and processes): and (4) sociology of information (social processes, policies and environmental context).

The research model consists of (a) social, behavioral, managerial and engineering processes; (b) policy and environmental contexts, and (c) relevant theories and methodologies.

GREGORY, LEE H., 1959:

Librarians are involved in the classification of knowledge which requires "a speaking acquittance with the total body of human knowledge, a comprehensive understanding of basic principles defining their scope [hence] . . . the library should have a missionary zeal for informal education." (p. 47)

---- 1960:

This is a response to a journal's rejection of his article 'Creative librarianship' on the ground that the magazine has limited space for professional discussions other than 'how-to-do-it' papers. The author felt that "the profession needs not only new machinery and improved methods to take care of its everyday routine services, but constant evaluation of those services in the light of experience . . . we act just like another salesman, whose main concern is to sell more goods, BUT WE ARE NOT ENGAGED IN SELLING GOODS! WE ARE ENGAGED IN CLARIFYING ISSUES IN A WORLD HARASSED BY ALMOST UNBEARABLE PROBLEMS!" (p. 222 - the author's capitalization)

GREGORY, MARSHALL W., 1983:

The academic profession is characterized by a conflict between careerism and selflessness, illustrated by three Greek characters described by Plato: Protagoras (rich, cynical and respected Sophist, the archetypal careerist), Socrates (a disinterested seeker of truth and moral values and a dedicated teacher) and himself (a master of meaningful insights). Protagoras is 'the professional's professional', Socrates represents a professional we would like to be, but only Plato can serve as a model for our profession, showing us "how to be professionally polished without indulging in narcissistic careerism, and how to maintain a grip on personal integrity without having to settle for hopeless obscurity." (p. 44)

The author stresses the importance of ethical aspect of library practice that influences the library profession. Plato criticized Protagorian careerism, debated Socratic radicalism offering a centrist approach of criticism and discourse.

GREMMELS, GILLIAN S., 1991:

"This article examines the validity of the neutrality stance used as the primary response to reference questions that present ethical dilemmas. The problem is considered from two perspectives: recent advances in research methodology and new theories of the public interest from the disciplines of political science and communication. It is concluded that achieving objectivity is impossible for humans and that librarianship, like all human endeavor, is riddled with values. A communitarian ethics that would recast reference work as a force for the public good is proposed." (p.362)

The communitarian theory of public interest differs from the traditional liberal public interest theories by stressing a contextualistic focus on all aspects of human relationships, with the individual interest subordinated to public interest, and government actively promoting equity. The approach of liberal theories equates individual interest with the public interest, and expects the government to provide impartial judication. "Not only is neutrality impossible for the librarian, but the entire concept is based on tenets of rights-based and utilitarian-liberalism." (p. 368)

GRIFFIN, BRIAN, 1973:

The virtues of the British socialistic philosophy are illustrated by public library importance in providing informal, non-standardized education in the increasingly standardized society. The limitations of the approach are evident in library attitude to the 'non-conformers' by offering wide range of subjects, simultaneously providing appeasing recreational materials for the majority of its patrons, in order to pacify them.

The approach becomes undemocratic "not because we do nothing for the people, but because we do everything for the people." (p.128) "To what extent is the public library, willy-nilly, acting as an effective neutralizer of individuality? The more concentrated and scientific the system, the severer the limitations of the individual." (Ibid.)

Social conscience always ends up in reinforcing vested interest against individuals' interests. This paradox can be resolved by public libraries if they stop thinking in terms of 'current social realities.' (p.130)

GRIECO, MARIE, 1967:

Librarians must be generalist focusing on interrelating knowledge of different disciplines, by providing services not only for all, but also for each patron. It is important to remember that the environment shapes us and is shaped by us.

Sensual perceptions and visual learning are fundamental and require a multidimensional approach in libraries by expanding its focus beyond print matter into multidimensional media. In reading a book one recreates authors perceptions, in seeing a film or sculpture one apprehends the whole at once, it is a creative process.

GROVER, ROBERT J., 1985:

A core course in library and information science should include: (1) a professional philosophy of the library and information science, related to one's own value system and providing a framework for setting priorities, and value system for decision-making, (2) study of behavioral patterns in communication of information (individual needs, selection, processing and use of information), (3) theory of information transfer (defined by Shera as 'body of knowledge about knowledge itself' expressed in creation, dissemination, and organization of information in a society), (4) methods of organization of information for efficient retrieval, (5) management of information systems (mission, objectives, policy's selection etc.), (6) ability to analyze patrons needs by applying appropriate research methodology, and (7) educational, cultural, informational, research, recreational and bibliographic social functions of the library.

GROVER, ROBERT and JACK GLAZIER, 1986:

The authors propose a model for theory building which displays relationships among phenomena at various levels of theory and research. The approach is based on the aristotelean notion that 'the whole is greater than the sum of its parts'; it is not enough to understand each component individually, the approach must be holistic: "the concept of unity or interconnectedness that is integral to the taxonomy is one of the basic principles that typify the philosophical position of many thinkers today." (p. 241)

Research involves data collection and analysis in preparation for theory building, either through formal research methodology or by a synthesis of information gained through reading, discussion and experience.

In both cases there is a 'creative leap' or intuitive synthesis that generates theory. Theory is a verb: it is constantly evolving, a dialectic process in which theory becomes a tested thesis.

GRUNDT, LEONARD, 1975:

"It is important to move away from the current emphasis on standards for specific types of libraries. Instead, standards should be formulated for measuring the extent to which the total library resources of various geographical areas are coordinated." (p. 177)

"There will be greater cooperation only when librarians and society at large have a mutual commitment to work together for the benefit of all people. We must somehow change the attitudes of those who see little value in sharing. Joint programs must be perceived not as potential treat but as potential promises of more effective and more efficient library services." (p.178)

GUPTA, R.K., 1969:

Librarianship faces the problems of an image (stereotype), conflicting professional status (professional vs. clerical tasks), autonomy (obligation to satisfy the patron) and satisfactory code of ethics (problem of discrepancy between values and practices).

Theoretical knowledge provides principles as bases for library practice. Philosophy of librarianship is weakened by librarians abdicating their professional autonomy by not distinguishing between the attitude of servitude to the patron and professional goals of assisting the reader in the use of library materials. Professional criteria of values ought to protect the librarian from pressure groups interference stressing his duty to safeguard freedom of thought.

GWYNN, STANLEY E., 1954:

The ability of the university library to serve the undergraduate is not directly determined by the university library size, nature of its book collection or complexity of its organization, but by the educational needs of college students.

These needs can be fulfilled by the university library if the students posses necessary knowledge and skill in the use of library resources. Teaching these abilities is the function of liberal education, and is best provided in a small college environment. The university library has to compensate for its impersonal character by providing individual instructions in library purposes and techniques.

- H -

HAAS, W.J., 1987:

As a profession based on academic libraries, librarianship is 100 years old; as a 'calling' it goes back to times humanity become conscious of the idea of continuity.

Librarianship has been a stable profession, with a mission, defining operational setting, and agenda of duties based on procedures. Can such a disciplined profession survive in an undisciplined world?

Universities are no longer structured and predictable, but diffused and complex, both intellectually and organizationally. The traditional academic independence is maintained by balancing the demands of many people.

These changes are reflected in the academic libraries mismatch between the substance and perceptions of our profession. Librarianship must be redefined, with the library more visible to scholarship, research and teaching. The idea of a generic librarian may be outmoded, librarianship may have to

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become an aggregation of discrete specialities. focused on a common cause, both in theory and practice.

Low visibility of librarianship, lack of significant research and ambiguity in definition of 'libraries' and 'librarianship' affects both library operations and education. Renaming of library schools suggests transferring responsibilities for library education to 'information' disciplines, and indicates a failure to address its own substance.

Changing technology affects not only libraries but the whole scholarship. Significance of these changes is illustrated by ineffectiveness in dealing with some library problems such as fragmentation of bibliographic structure and lack of plans for collection and preservation that are realistic and cost-effective.

New base for 'information studies' include: (1) the study of structured, or organized information with equitable access to information as an ultimate goal; (2) information science defined as the processes of generating, organizing, storing, distributing and using information in all its forms; (3) the development and management of organizations charged for provision and service of information resources.

All these issues require understanding "information itself, the policies that affect content and access, the processes involved, and the organization and management of the operating organizations." (p. 4)

The discipline of information science is a consolidation of topics from different disciplines into one cohesive whole. It includes, (a) an intellectual property, copyright, effect of regulations on information flow, proprietary issues in law, (b) methods of assessing values and costs of information links between information and productivity, the economics of information industry, effects of international access to information on scholarship, (c) the influence of information technology on social structures and processes, and the characteristics of needs in 'information societies' (sociology), (d) public information policy, and the effect of national information practices on third-world development (public administration), and (e) relationships between creativity and information availability, organization of knowledge, and ways of learning in other disciplines.

All these issues are considered in terms of putting information to use in a society. "This is the appropriate foundation for our profession. It is the academic base on which our procedures and practices must ultimately rest." (p. 5)

---- 1988

Technologies presently used by libraries include (a) an information storage (reduced-size images on film, magnetic storage of images, encoded information on computer tape, laser-based digital/optical systems, such as CD-ROM), (b) distribution (electronic networks utilizing telephone, leased lines, fiber glass cable and satellites) and (c) processing (from basic processes to sorting, cataloging, interpretation, evaluation, synthesis and integration of information).

It all started with automating cataloging, acquisition, and circulation. Computer and telecommunication have significant impact on libraries by facilitating cooperation and joint ventures between libraries, creating new international information industry.

Most remarkable is the recasting of bibliographic foundations for scholarship and research (from card catalogs to computerized catalogs, standardized formats for different kinds of publications and languages). Conversion of text to electronic or optical/digital formats for distribution is still in its early stages.

As the results of these changes library interdependence is now an irreversible fact of life, although the format of such interdependence is still taking shape. There are many points of view, all important and firmly held and few principles that need consideration, such as equitable access to information, responsible use of financial resources, preservation of past publications, building collections for future use, and exploration of better ways for individual and society to make full use of what is known.

HAINES, HELEN E., 1938:

Library development followed a succession and multiplication of methods and changing emphasis of the nature of librarianship.

The foundations of librarianship were based on books as components of culture and on reading as enlightenment. Initial development was a practical change in mechanical and bibliographic processes resulting from technical inventions and changing environment.

The present trend is toward specialized intellectualism, efficient mechanical operations, statistical research, mechanization of functions, transforming the library cultural backgrounds, and shifting book selection from books themselves to the subject selection based on statistical mass-analysis of readers interest. The community rather than individual become the unit of service, and the types of books rather than the values of an individual book become the criteria of selection.

The new approach suggests two fallacies": first, that individual human beings, each one peculiar to itself, can be transmuted into mathematical figments; second, that book values, potent but imponderable, can be translated into statistical formulas for automatic mass application." (p. 621)

---- 1946:

" Philosophy seems to me an individual and personal distillation from the chemistry of one's own thoughts and experience, rather than a collective, impersonal formulation of beliefs and conclusions set forth for individual acceptance." (p.848) Any profession "must have three distinctive characteristics: it must have a discipline (a system of training), ethics (formulation of rules of conduct and moral obligations), and a vision (the outcome or essence of a philosophy). (Ibid.)

Ethics is moral, personal and individual stressing self-discipline and self-development. Library ethics requires responsive interest in people, personal knowledge of books, confidence and purpose.

American librarianship developed in three stages: formulating professional discipline (education), ethics (a code of practice) and finally philosophy. "From these mingled forces of past, present and future a philosophy of librarianship will take shape. Quoting John Dewey, 'life without it must be a different sort of thing from life with it. And the difference which it makes must be in us.'" (p. 851).

---- 1950:

This is an essay on esthetic approach in librarianship, stressing inspirational value of books. The book assists in formation of character (unconscious self-education), it provides a background for understanding the meaning and interest in living. It increases sensitivity and awareness of cultural changes and its impact on an individual reflects that individual's personality. Librarianship brings books into the common life. Belief in books, receptivity and broad-mindedness, framed by social consciousness, confidence and purpose, are the prerequisite of the library profession as an intellectual leaders.

HALL. MARLENE. 1984:

Introduction of automation does not deprofessionalises librarianship; the changes in knowledge and the structures of subject disciplines produce technocratic professional, concerned with the provision of information services. "Such services define the user in terms of abstract categories rather than attempting to foster the values and culture of particular community." (p. 23)

A profession transforms the traditional intellectual rules into mechanical techniques, defining rational action, identifying means to achieve it and shifting librarians' focus from the knowledge of books to that of media and computer accessed data.

The subject disciplines "integrated in some areas, are being stratified and differentiated. And the non-professional gradually is being denied control over his or her work by the increasing dominance of theory over practice." (p.27)

HAMBURG, MORRIS and others, 1976:

The evaluation of library goals is difficult because of the interrelatedness among the library objectives that reflect variety of library resources and their use.

"The essential ingredient missing in previous studies was a lack of clarity concerning what the library was attempting to achieve as well as a failure to specify the link between the data and use made of the data." (p.129) "The systems approach is an extremely useful methodology for linking the library's information system with its objectives and its decision-making and planning process." (Ibid.)

HAMMARBERG, ROBERT, 1981:

The author opposes the theory that data are raw, brute facts, from which information and knowledge are derived ('cooked'). If this approach is accepted, then (a) the subject matter of information science overlaps with cognitive psychology and epistemology; sharing their interest in the way knowledge is attained; or (b) data are intrinsically defined in terms of Empiricist Foundationalism.

The Foundationalist assumes existence of the basic foundation for knowledge. The Empirical Foundationalist maintains that raw data are unprocessed givens, different *in kind* from information and knowledge. Hence knowledge can be attained from data by means of an algorithm, automatically and independently of imperfect human processing (a view held by business and government interpreting knowledge in terms of power).

Since nothing is known about intrinsic properties of data, information processing system (IPS) becomes an interface with reality, reality being an aggregate of data.

This view is supported either by (a) Naive Realism (data enter IPS directly in their intrinsic form), or (b) by Indirect Realism (assuming a categorical distinction between data and their derivatives).

Hammarberg objects: "Matters not representable are not accessible, and matters accessible are so only in virtue of being presented in the language of the IPS." (p. 263.) Data and information to be compatible must also be of the same kind. If the raw data are foundational then they can be apprehended by IPS in some representational language, hence they became processed, losing their essential property of rawness.

Farradane proposes that information is "a physical surrogate of knowledge (e.g. language) used for communication" as an 'invariant starting point." (p. 264) This calls for a distinction between physical (e.g., sound as an acoustic wave form) and cognitive (e.g., something heard) phenomena. The relationship between the two concept must be unique (i.e., 'if and only if'), this is a position of Physicalistic Reductionism which maintains that all psychological events and categories are coexistent with physical entities. Hammarberg asks, what is a physical surrogate of the necessary ingredient of information meaning? Language is not a surrogate of anything, and not all information is knowledge.

"We may have false information, but to speak of false knowledge is like speaking of false truths - it is a contradiction in adjecto." (p. 266)

In his answer to Farradane's comment based on the notion that information is defined in terms of language theory (J.Farradane, 1981), Hammarberg states that "to say that writing is language is like saying that a picture of a cow is a cow" (p. 225) and hence "one cannot recognize something as 'something', except in terms of a concept of that 'something'." (p.226)

HANDLIN, OSCAR, 1987:

Library function is to help scholars to expand the store of knowledge by reorganizing the information assembled in library collections. Librarians must follow specialized informed opinion in building their collections.

Enemies of the library are: (a) externally, cultural apathy toward reading, and preference for immediate gratification over long term satisfaction. (b) Internally, library preoccupation with technical retrieval of bits of information rather than concentration on information's meaning; this is a museal approach to library collection, protecting it from abusing users and hyperspecialists by focusing only on their own subject area.

Libraries can do more than just provide machine produced answers, based on how they were programmed: "In the library, no one tells students what to read; they roam where their interests lead. No one doles out information; they seek knowledge where they wish. The library is a place of learning as the school is not, a place where questions are not stiffed in ready answers but provoke thought, and where one thought leads to another. The warfare between the established learning ensconced in the schoolroom and lecture hall and the subversive learning hidden in the library is more acute and more vital as ever. The outcome will decisively influence our culture." (p. 217).

HANKS, GARDNER and C.JAMES SCHMIDT, 1975:

The traditional sociological model for a library profession is rejected. It contains elements that resist change. The authors propose an alternative model based on the General Systems Theory, which is open and more hospitable to change.

HANNABUSS, STUART, 1988:

This is an epistemological definition of knowledge: "We think, therefore we know. Since we know, and know we know, we know we think. Thinking is used for extended knowing. Such knowledge may be structured in many ways. Professional groups invent, order and normalize their consensual knowledge. Educationalists develop ordered structures of knowledge and think of them as subject domains and disciplines.

Such systems of knowledge are substantive, in the sense that they concern themselves with content, significant factuality, values and beliefs. They are also procedural, because they deal with and imply methodologies and preferred ways of investigations." (p. 7)

The explanation can be either nomothetic (illustrating a general statement) or ideographic (implying subjective reality interpreted intuitively). We accept or reject the explanation and then build into it causation, explaining the relationship between past explanation and future anticipation. Knowledge is aetiological.

Paradigms describe the world views based on factual and intellectual knowledge and the methods of investigating and explaining it. They embody different approaches (e.g., political), changing with reformulation of knowledge (e.g., from pre-Mendelian to current genetics) and are formulated in different cognitive and linguistic frameworks of knowledge. In searching for information we reformulate, redesign and redefine our concepts, alter causal relationships, and ask new questions.

We convert information into knowledge by categorizing (differentiating) and interrelating concepts into ordered knowledge on two levels: (a) horizontal, in which synonyms are turned into metaphors, and (b) vertical, of subordinate and superordinate concepts and their relations (e.g., genus-species relations).

Knowledge can also be ordered by frames (settings for contextualizing and giving meaning to phenomena) and scripts (meaning based on experience). In information inquiry, frames clarify the explicit or implicit needs of the inquirer, and scripts allow us to anticipate patrons' behavior that reflects a wide range of interpersonal relations.

This meta-cognitive mediation on knowledge and information "entails knowing how people come to know, and how they use knowledge, and that knowledge of the knowledge. Paradigms and frames are important for understanding how people hold and use their knowledge, and where the facts and feelings are strong and weak. The complex diversity of the information enquiry, and the learning styles of people involved in such enquiry, is worth careful investigation because of the light it sheds on knowledge representation." (p.14)

---- 1988a:

Knowing implies a faculty of organization or order. Ordering can be objective or subjective, empirical or intuitive. Structure suggests a pattern within the discipline; patterns emerge through processes and causations. The conceptual structure of a discipline determines what is searched and how the results of the search will be formulated.

Pedagogical structure is the system of learning devised by a teacher and interacted with students. An individual's encounter with subject matter involves integrating new knowledge into one's personal knowledge. Most subjects have more than one structure.

Information science is concerned about process of knowledge formulation, organization and retrieval and is interconnected with computer science, psychology, librarianship, linguistics, mathematics and engineering.

Management is an amalgam of economics, politics, psychology, design, cost accounting, commerce, engineering and office technology. The procedural part in structuring the knowledge includes the ways experts in that field use the criteria, such as references.

The aspects of library management include the following factors: (1) formistic: form and function; (2) contextual: emphasis on community served as a context; (3) normative: expectation of what librarians should do; (4) contingent: open ended and individualistic management style; (5) positivistic: based on scientific and observable knowledge; (6) humanistic:

human values of major importance; (7) predetermined: an autocratic operational model (hierarchical); (8) negotiated: participative model; (9) technical: quantitative skills; and (10) interpersonal: emphasis on people skills.

HARDEN, RICHARD, 1978:

"We are trying to develop a system to fit the needs of individuals as opposed to try to force individuals to adapt their style to a particular system." (p.13) Librarians collect information in the sense of identifying sources of data and the timely transmission of these data, focusing on storing and effective retrieval, analysis and electronic communication of information to general public.

HARLEY, J., 1953:

"We have no sense of value or proportion, no philosophy of history, art or anything else; we attempt to preserve everything." (p.3) "The first principle of art is that it consists in selection and compression . . . The ability to decide what is to be kept postulates a philosophy defining some absolute values." (Ibid.) "A paradox [is] in that it is from the things which we are preserving that men will gain the experience necessary for them to decide what to preserve." (Ibid.)

The further a man advances along the path of 'philosophy', the less he needs - certainly the fewer books he needs. If we were really progressing we should be gradually ridding ourselves of our books, rather than feverishly collecting every new one that appears" (P.4)

---- 1954:

The expressions such as 'philosophy of librarianship' or 'the ethics of librarianship' do not mean much. The public library may have some general philosophy or ethics, but a special library can only follow the philosophy of its institution.

"My philosophy is a philosophy of the elite . . . [but] I should be ashamed if I did not want to include everybody in that elite." (p. 420)

Most of the things in our life have no value, the books like ideas become obsolete. Librarians love books but they must also love what is written in them. Having no tradition of his own librarian must relate to other disciplines. The author suggests education as the discipline aiming at the whole person.

HARLOW, NEAL, 1963:

There are three distinctive levels of academic library services: (1) college level focusing on instruction in general and self education; (2) university level general in scope and specialized in the content of its holding, focusing on needed information in subject fields and synthesis for research, and (3) research level that provides intellectual support for research activities, mainly by offering information rather than material for a particular clientele in special libraries.

"Library resources are vital to the academic man, but a library system to satisfy his intellectual requirements has seldom justified its existence to him." (pp. 363-4)

---- 1969a:

Librarianship has no uniform philosophy. In 19th century the focus was on technology (Dewey), in 1900 on reference, bibliography and book selection, in 1920 on cataloging, classification, subject heading and administration; later expanded by additional courses in special librarianship, information science, system analysis and computer programming.

Harlow suggests the application of the field theory that was developed in physics for library philosophy, not as a theory but as a unified approach, with a library considered as a process not separated from other disciplines.

The theory "presents a generalized notion of a 'field' within which all occurrences take place - all events in 'nature' occur within some field, large or small - and the properties and structure of the field (rather than any limited or intrinsic forces) explain local phenomena. [It] is opposed to 'atomism' . . . and is disposed toward larger, more complex, and 'natural' rather than artificial units . . . identifying and arranging its elements into 'interbehaving' systems which interact with each other as 'wholes' rather than 'bit-by-bit'." (p. 79)

The field theory analysis starts with the situation as a whole, stressing organization rather than its parts. It is a dynamic system expressed mathematically that distinguishes between relationships within and in a system.

Applying the theory to librarianship, one starts "with the system or frame of reference within which knowledge and information are created, communicated and utilized . . . constructing sub-systems of interacting influences and activities related to sources of information, processes and people - instead of subdividing functions and operations into distinct types and parts." (p.80)

In this theory the 'field' refers to the existing knowledge and information, as a part of larger field that produces new knowledge. The structure of the field is the process of communication, the 'particles' are indemnified with 'bits', facts or data, and 'weaves' with propagation of 'ideas'. 'concepts' and 'subject-matter'. The concept of 'entropy' relates to the disorganization of information, degradation of meaning in information transfer and the margin of error in the model itself.

The sub-systems of the library field of communication include: "(1) the generation, organization, and storage of the record . . . (2) the interface between the record and user . . . (3) the retrieval of information . . . and its transmission; and (4) the evaluation of output in terms of satisfying users' needs." (p. 81)

The application of the field theory in librarianship broadens the library curriculum by dealing with macro approach, accenting the interaction of elements in the library as an organic whole and underlining a continuum of the processes, stressing the need to interrelate different intellectual approaches and disciplines in library curricula.

---- 1973:

Distinction is made between 'acquiry' (acquisition of information), as a major function of librarians and 'inquiry' (examination of information), as a major task of a teacher.

However many libraries exist more in a state of being than doing; they are like a misread power of high voltage sources that is used only for a low current, flowing through the system for lighting an individual lamp, which requires little electricity.

In automation age libraries cannot be reduced to push bottom operations; they are not only a source of information but also a tool for learning, with patrons shifting from 'acquiry' to 'inquiry' and back again.

Librarians' responsibility is to manage, acquire and to instruct by accommodating learning process to the individual students needs. Important here is the concept of independent study: library will acquaint the patron with the function of information in inquiry (as evidence, not answers) and familiarize him with information sources, teaching how to recognize and evaluate content, how to understand the organization of the scholarly discipline, the arrangement of material in the library and the pattern and utility of bibliographic structure and method. For more advanced users the library offers information instead of instruction.

The library is not only the collector and transporter of information (delivering it in exact form in which it is received) but also a transformer, processor and analyzer, always providing evidence, not answers.

HARLOW NEAL and others, 1969:

In U.S.A. public administration as a discipline began in the early 20th century. Bureaucracy of the early 19th century was simple with minimal governmental services. In 1820s following Jacksonian reforms, laymen took over decision-making initiative, stressing decentralization and minimal government involvement (Adam Smith).

Professionalism emerged in late 1930s expanding public services and governmental controls. Administration was defined as planning, organization, staffing, directing, coordinating, reporting and budgeting (POSDCORB). The Human relations movement began at the same time stressing importance of personal relations. It influenced development of library management by opposing the notion that the library as an agent of change can best accomplish its goals in a conservative, traditional environment.

In 1950s a number of new theories emerged. Operations Research stressed mechanization, computers and simulation; Systems Analysis focused on the nature of systems; and

Organizational theories studied interdisciplinary analysis of organizations.

Administrative views among library theoreticians were revolutionized in 1950s by stressing political, bureaucratic and professional ethical issues; however, majority of librarians were slow to follow the changes.

Bernard Goldstein proposed that sociology is focusing on the structure and dynamics of social interaction, considering change as a constant social reality. "Libraries can be viewed as part of the communication network of the society and community; . . . of the system by which the culture of the society is cultivated and transmitted; . . . of the technology of a social system; and . . . the social system of the community." (p. 43)

David L. Raphael maintained that system is a point of view, a philosophy based on the notions of relations, integrating static concept of 'structure' and dynamic of 'function': it is "an organized or complex whole; an assemblage or combination of things or parts forming a complex or unitary whole." (p.52) Library system is homeostatic (controlled by feedback), goal oriented and constantly changing in response to socio-economic environment.

HARMON, GLYNN, 1971:

Information science "emerged not only as an expansion and metamorphosis of documentation and information retrieval; it directly or indirectly incorporated or paralleled several prevailing objectives and concepts of the communication and behavioral sciences and other contributing disciplines." (p. 240)

Documentation as a disciplinary system began with the Vannever Bush article in 1945. It focused on the physical aspects of the documents and their use: the organization, needs, and use of information, creation, copying, storage, retrieval, language analysis, mechanical translation, system design, analysis, evaluation, abstracting, classification, pattern recognition and artificial intelligence.

Information retrieval concept was introduced by Mooers in 1950. It covered organization and communication of information, its cognition, numerical measurements, adaptation and equipment.

Communication and behavioral sciences emerged in 1950s from the earlier work in linguistics and semantics (1933), value inquiry (1938), decision theory (1939), documentation (1945), information theory and cybernetics (1948), general systems theory and information retrieval (1950).

Information science was defined in 1962 as a communication discipline concerned with properties and behavior of information, and its processing for maximum accessibility and usability.

In management science's decisison-making the focus was on information transfer, intra-organizational data flow, and scientific research methodology, primarily based on mathematics and statistics.

*Information science becomes an objective*, subjective and practical mode of inquiry, extended to liberal education (Gorn's 'Cybernetic Pragmatism'), humanities ('Epistemo-dynamics' of Kochen), engineering symbol manipulation (Slamecka), and statistics, cybernetics, bionics, mathematics, library science and documentation.

Confusion between 'science information' and 'information science' is created by a similar confusion between science (totality of systematized recorded knowledge) and research (striving for new knowledge).

"The programmed development of information science might embrace more than the science of research . . . long range role for information science involves active participation in forming a complete subsystem of knowledge which would unify the arts, sciences and professions . . . [overcoming] the limitations of human short-term memory." (pp. 240-41)

---- 1973.

This is a study of relationships between development of fields of recorded knowledge and the limitation of human memory. If follows G.A. Miller's notion that the span of immediate human memory is limited by learning and nervous system to seven chunks. Number of bits of information can be extended by developing larger chunks, each with more information than before.

Knowledge grows by synthesis of scientists findings, It is formed into individual systems of knowledge, and is combined into larger systems after reaching the 'seven-plus-or-minus two' separate systems, The synthesis may be a product of multiple, simultaneous discoveries.

The above hypothesis is illustrated by a discussion of subsystem formations in mathematics from Euclidean geometry, through calculus, universal gravitation into unified geometry. Each of these subsystems was a result of previous synthesis, averaging seven contributions per each instance.

The suprasaystem incorporates seven sub-suprasaystems, four of them already developed: humanities (1500s), physical sciences (1600s), biological sciences (1700s), and social sciences (1800s); each of these sub-suprasystems is composed of approximately seven disciplinary systems.

Information science is a disciplinary system developed through a number of key synthesis described by the following events: (1) emergence of professional organizations, (2) special libraries' documentation services (1909) (3) the Vannaevar Bush essay in 1945 (4) Bradfrord work in 1948, (5) Mohrhardt's information retrieval in 1950, and finally, the emergence of information science in 1964.

At the same time a similar pattern was manifested in the emergence of behavioral and communication sciences, both affecting the development of information science, linguistics and semantics (1933), value inquiry (1938), decision theory (1939), game theory (1944), documentation (1945), information theory and cybernetics (1948), and general systems and information theories, forming communication and behavioral sciences (1950).

Information science together with other communication oriented disciplines may in a future form a suprasystem unifying the arts, sciences and professions by revolutionary system formation and its evolutionary transformation.

"The formation of a new paradigm, using the evolutionary approach would involve the acquisition and ordering of information elements until a relatively complete and orderly new paradigm is formed. Using a revolutionary approach, information elements would be accumulated in an attempt to reorder or replace the old paradigm . . . the same line of inquiry would be simultaneously revolutionary and evolutionary. (p.120-21)

HARRELSON, LARRY E., 1974:

Harrelson reviews Wasserman's call for a proactive approach in librarianship (1972), in terms of its rhetorics, focusing on the nature of inquiry rather than on the nature of the material studied.

Wasserman's theme is that the librarianship is book-oriented, unresponsive to the patrons needs, and should become information-ortiented and client-centered. His argument is three-fold: (1) in the past knowledge, expanding at a slower pace, was completely recorded in print, and the library was able to handle it. (2) Social needs changed and new information forms were developed, while the library remained the same. (3) The library will have to change to proactive, client-centered approach.

The interaction between the emerging proactive librarianship and the traditional, bureaucratic reactive approach resembles the distinction made by N. Frye (1957) between future-directed ideal concept of librarianship, and the society controlled by present status quo. The interaction between the two forces results in a particular structural patter (time-bound myths).

The relationships between the two forces can focus on the negative blocking character of the conflict or on the possible reconciliation. Wasserman selected the former approach, concentrating on the obstructing forces within librarianship. The moving forces are the client-oriented present and future librarians, represented by book-centered, passive librarians.

The change, suggested by Wasserman, will be forced by tight job market and newly developed experimental programs, reconciling or converting the traditional approach rather than repudiating it. "The opposite of this ending is 'the absurd': libraries full of information but not meeting information needs." (p.223)

HARRIS, Michael, 1973:

This is a revisionistic interpretation of the American Public library movement. Harris rejects the 19th century 'uplift theory' as autocratic and elitist approach aimed at stabilization of the American society, disturbed by the new emigration.

Librarians are confusing the function of the library to provide e.g., recreational reading, as a means with the library purpose, e.g., to control the behavior of the people, as the end itself. The failure of the 19th and early 20th centuries to control that behavior lead to the present role of the library as a 'guardian of peoples right to know.'

George Ticknor is considered an 'educator of a common man'. His philosophy was based on the belief that (a) man is perfectible, (b) books can be used as primary means for intellectual perfection, and (c) there is a need for a public library to provide this material free. The goals of this humanitarian and idealistic movement were: (a) to educate common man so that he can follow 'best men'; and (b) to provide books for selected elitist minority of emigrants who can be attracted to the library by providing them with light fiction as a 'carrot.'

Once the people are in the library, the librarians responsibility is to improve the patrons taste for reading. This was a change from the librarians' previous interest in scholarly aspects of librarianship. Librarians were less concerned with theoretical and philosophical matters and more with organization and management aiming at more efficient management.

Librarians attitude was always authoritarian, limiting full access to the collection, by assuming the role of the custodian of public morals, and elitist by serving selected minorities.

This attitude was endorsed by Carnegie, himself a conservative, rigidly moralistic and strong individual, supporting those who wanted to improve themselves. The library, to Carnegie, was a good investment in implementing indirectly the order, stability and economic growth.

The desire of librarians to serve the elitists and at the same time to maintain public support lead to the hypocrisy and bureaucracy; the library between 1920 and 1940 was a social institution without a purpose.

In 1940s some librarians become aware of the mindlessness of a public library, and called for a philosophy of librarianship based on the service to the patron, increasingly arguing for the library mission to protect people's right to know. This was a war period and many of the librarians called for preservation of political democracy, replacing authoritarian approach by neutrality: not to force the patron to learn, but to assist him in that process.

This new philosophy: (a) assumes that right decision needs information, (b) it confirms the importance of education, (c) it allows for passive attitude in the name of philosophical neutrality, (d) it shifts responsibility for any initiative to the patron, and (e) it does not eliminate librarians' elitism.

This view was criticized not for its position but rather for a fear of public reaction to the proposed changes. There is a contradiction in the popular call for public support of the library, arguing that books can have a positive impact on an individual reader; at the same time objecting censorship on the ground that a book cannot harm anyone.

---- 1976a:

"The history of American librarianship can best be viewed as a recurring cycle of fitful and outer-directed commitment to crusades conceived as essential to establishing social stasis and blunting radical change in order to preserve the nation from chaos and ruin, followed by periods of ambivalence in which the library profession, lacking a clear-cut professional view of its role, reverted to a mindless focus on technical and bureaucratic matters. These ambivalent stages were characterized by a lapse of optimism and self-conscious assertion of librarians significance to the national lifeway." (pp.284-5)

Dewey and William Fletcher expected librarians to assume responsibility for guiding reading taste of patrons, endorsing Socratic concept that knowledge creates virtue.

The moral library role was later advanced in 'Americanization' of emigrant and support of efforts to save world for democracy. Although unsuccessful, the dream of a cultural uplifting role is still called for, with however, the main focus on pragmatism, management and efficiency of library operations.

In 1920-1940 periods some librarians criticized the pragmatism and called for a philosophy that would define the library role in a democratic society.

In 1939-45 the new mission of Jeffersonian intellectual freedom and neutrality was formulated, but remained conservative in politics and social conscience.

Harris agrees with Nitecki's procedural, conceptual and contextual service missions of librarianship, but does not belief that those three conceptualizations can be harmoniously integrated in the philosophy of librarianship.

American librarianship is 'outer-directed', insensitive to the issues of lower, middle and minority classes, based on a conservative, reactionary, authoritarian and elitist attitudes, favoring social-cultural elite. "Librarians have for too long abnegated their responsibility to define their role in society. Lacking a clear sense of direction and a firm commitment to the preservation of human values, they have drifted from one 'mission' to another." (p.297)

---- 1976b:

The American public library was founded by authoritarian-elitists leaders like Ticknor whose philosophy influenced the library purpose to (a) educate the majority of lower classes in order to control their behavior, and (b) to provide intellectual resource for the minority elite.

The paradox of working classes acceptance of the concept of a public library at the same time being indifferent to the services offered, is explained by a gradual weakening of political and social authoritarianism, and at the same time, the rise of the equalitarianism in American society.

"From the founding of the Republic, authoritarians had endorsed education of the masses as one means of keeping the people loyal." (p.2228) "While Jefferson argued for education as a guard against aristocracy and rule by the few, most of his

Federalist opponents supported educational schemes designed to control the common man not to liberate him." (Ibid.)

The democratic dogma of universal education lead to the support of the public library as a provider of opportunities for developing equality. However, the workingmen, accepting that dogma as given, were concentrated on the issues related to working and living conditions, ignoring the library services as irrelevant to their struggle. This, Harris calls, the decline of the democratic dogma stressing the importance of universal public enlightenment through education.

---- 1977:

Methodology of the studies of library history should reflect the Jeffesronian-Jacksonian-Rooseveltian liberal, progressive continuum. This however, was not the case till the 1940s; at that time libraries shown little interest in protecting the individual's first-amendment civil liberties.

The historical perspectives of library historians are two-fold: (a) revisionistic liberals stress the librarians values, ideas, and opinions; and (b) the conservative historians focus on the consequences of library services, overlooking the issues of professional self-awareness and prejudices in responding to changing social environment.

Professional concerns are divided between (a) critical research to understand the profession, and (b) professional attitude of piety in praising it.

"The revisionist historians bring a new sense of critical scholarship to library history [providing] understanding of the forces that shaped the history of librarianship in America." (p.42) "The old progressive synthesis has been persuasively challenged." (Ibid.)

---- 1986:

The problem of library research lies in the positivist epistemological assumptions and a 'pluralistic' viewpoint'.

Positivistic epistemology focuses on scientific, apolitical methodology in the study of library management. In this approach library science is considered as a natural, quantitative science, and library scientists are value-neutral, aiming at discovering general laws that govern library operations and explain, predict and control its functions.

Pluralistic worldview postulates that (a) authors have freedom of expression, (b) publishers are neutral in selecting topics for publication, (c) librarians maintain neutrality in serving their patrons and (c) library users have pluralistic interest.

As a result, library research focuses on administrative evaluation of performance, productivity and usefulness of library services, leading to reductionistic definitions of the relevance of efficiency in library management.

The pluralistic perspective "has dictated long and broad structured silence relative to the ways in which social, economic, and cultural power relations shape the nature and extent of library service in America." (p.222) "The positivist epistemology . . . has severely limited the range of questions that can be investigated and has rigidly defined the characteristics of relevant answers [eliminating] the possibility of grasping the complex, embedded nature of library service in America." (Ibid.)

The author proposes the theory of library service in America that focuses "attention on the role of the library as a consumer of high culture, and contradicts the definition of the library as 'primarily a producer of civilization.'" (p. 241)

As marginal institutions, libraries are responsible for transmitting and reproducing "high culture in printed form." (p. 242) The theory is elaborated by a number of propositions referring to high culture creators, library mission and operations, and the characteristics of its users.

HARRIS, ROMA M., 1989:

This survey examined librarians opinion concerning different approaches to bibliographic instructions. There is no consensus about the teaching role of the librarian, patron's self-sufficiency in the use of the library or the 'spoon-feeding' provision of information required by the library patrons. The preferred approaches reflected librarians views based on their training in bibliographic instruction and the size of the library involved.

Patrick Wilson is for the instruction: the degree of independence of the patron in the use of a library depends on the knowledge of opportunities available. Reference is a teaching function in the use of library tools.

Pauline Wilson is against instruction: the concept of a librarian as a teacher is a fiction. Instruction interferes with the concept of patrons' self-sufficiency and discourages independent learning and research.

The author suggests a compromise: instruction is not automatically appropriate for all situations. In teaching the use of a library, a patron can be encouraged to be independent, but instruction is definitively needed for children, and some patrons and is determined by library environment.

---- 1993:

The author maintains that "some consideration of gender is essential in understanding the forces shaping the future of the field . . . acknowledging the fact that, for more than 100 years, library work in North America has been women's work." (p.874)

"Librarians are in danger of abandoning the core of their discipline - that makes them unique from others in the information sector - at the very time their skills in organizing knowledge and negotiating information needs are both very much in demand." (p.876) "Librarians, in the mindless pursuit of status, lose sight of their own value by breaking their connection with women's work." (Ibid.)

HARWELL, RICHARD. 1960:

Librarianship is concerned with books, people and ideas. The unity of librarianship is represented by generalist-librarian.

"In an age of specialization librarians are generalists. In an age of mechanization they are humanists. In an age of conformity they are individualists." (p.655) The triad of books, people, and ideas is the essence of librarianship which is not a storehouse but a unity of various treasuries of ideas.

Communication, automation, and documentalism are the secondary issues. Specialization is important, but the library is administered by library generalist.

HARWELL RICHARD and ROGER MICHENER, 1974:

The paper criticizes the Michael Harris essay on public library myth (1973). Harwell maintains that the 19th century public library movement in Boston was not prompted by the intellectual elitists attempt to impose its morality on people, but by the republicans who believed in the essence of liberalism of the Enlightenment as expressed in the American democracy.

Longfellow's letter "gives a positive bases to the philosophy of librarianship that made 19th-century libraries a force for good in their own time. It gives a historic ground for the idea of library college, and the open university. Most of all, it reinforces faith in libraries." (p.963)

The self-interest motivating the founders of public libraries was the most reliable of human motives. It was perceived as the willingness of citizens to transcend self-interest in their devotion to common good. The motive was neither elitists nor intellectual; these terms were not then used in their present Marxian critical connotation.

American intellectuals developed the populist philosophy based on the belief in a superior morality of ordinary people. The Founding Fathers were not populists, they were educated and intellectual leaders of ordinary people. The administration of a public library was weakened by bureaucracy not by the self-interest.

"Revisionism stands perilously close to pogromism [and it] embodies two secondary intellectual traditions . . . of anti-intuitionalism, and . . . antitraditionalism ." (p.962) "It is valuable, . . . instructive; it is also partisan and ideological, and therefore, somewhat flawed." (Ibid.)

The public library movement fulfilled its mission: "the 19th century was the age of the public library." (p.963) "The 20th Century is the age of the research library . . . perhaps the next age of the library will be . . . less book-oriented, and more information-oriented." (Ibid.)

HATT, FRANK, 1961:

Hatt calls for reader-centered ethics. "By recognizing the importance to our culture of all kinds of communication, including . . . recreational reading, we can begin to find for ourselves a function other than of providing a neutral pipeline from the book-production industry to its book-consumers." (p.348)

Since culture is a concept with a constantly shifting meaning, the notion of cultural standard ought to be replaced by one of tension created by the increased choice between variety of cultural offering, restricted by the social controls of new media of communication.

Librarianship encourages the use of the records of culture. The book contributes to the culture indirectly as a tool, and directly as a reading material. Librarians are responsible for creating environment favorable for both the book use and its reading, by making it accessible to patrons.

The distinction between the library practice and theory of reading is reflected in different library emphasis and standards. For example, Richards distinguished between 'scientific' and 'emotive' reading; Savage differentiated between reading without and with purpose, between 'general' and 'a serious reader', Mills discriminated between information retrieval and storekeeping activities, and McColvin gave priorities for library support of serious reading.

---- 1963:

The author discusses the role of the public library in its social context. He suggests, that the search for a philosophy of librarianship or professional status are the expressions of professional guilt for not relating to anything outside its own discipline.

The modern western society went through three revolutions: (a) industrial, structuring the society into different classes,

(b) democratic, creating new class-consciousness, and (c) cultural, expressed in the process of extending learning to all people. The emergence of Mechanics' Institute was motivated by the working classes desire for self-help, supported by philanthropy of educated classes.

The British public library movement is traced back to that period's new patrons demand for the right to read what they want to, free from being told what to read. This change resulted in librarians unwillingness to suggest to the patrons any specific reading material. Librarians interpreted their role as providers of books, avoiding controversy about reading value-judgments. Even today, the concept of neutrality is interpreted by some as central to librarianship, overlooking its historical origin in meeting a specific social need. "The revolution has passed now to another phase and demands a different response." (p.15)

"What many people need now is guidance in the choice of the uses to which their literacy may be put." (p.16) guiding their choice of what to read.

HAUGH, W.S.1953:

"There can be no autonomous philosophy of public librarianship, only a philosophy of life as applied to librarianship." (p.237) "There is nevertheless the body of principles and relative values which command overwhelming support. These principles may be summed up by the statement that a legitimate aim of the community is to maintain and improve its material culture and spiritual standards and the function of public library is to assist these aims . . . the proper criterion is one of quality." (Ibid.)

Philosophical ideas are abstractions that must be translated into political action, with public opinion as a final arbiter. There is no clear distinction between education and entertainment, fiction and non-fiction; basic to all is the criterion of quality .

HAUPTMAN, ROBERT, 1976:

"The scholars of librarianship do not concern themselves with ethical problems . . . scholars who do take interest in this area almost all agree that personal beliefs must be subservient to the needs of the patron. . . . there nonetheless exists a subtle countermovement . . . that the librarian does not have the right to abjure moral decision-making . . . The danger of confusing censorship with ethical responsibility . . . to abjure an ethical commitment in favor of anything, is to abjure one's individual responsibility." (pp.626-7)

The author tested this ethical dilemma by asking 13 reference librarians for the material on building an explosive device. None refused the request because they believed that "the nature of the request is irrelevant; the librarian does not have the right to discriminate against a patron . . . [this] appeared to abjure responsibility to society in favor of responsibility to the role of librarian as disseminator of information." (p. 627)

---- 1979:

Distinction is made between ethical action, ethics of convenience and situational ethnics. Ethical action can be motivated either by an order (authority) or conscience. Ethics of convenience is subject to expediency, while situational ethical action is motivated by a particular situation.

Ethical issues vary with each profession, library ethics addresses issue such as conflict of interest requiring librarian's objectivity in providing information, confidentiality of the patron's query and responsibility of reliable reference services. "The sine qua non of professionalism is the willingness to assume responsibility for one's action." (p. 199)

---- 1988:

Kantian ethical principles consist of (1) good will (desire to act correctly, (2) duty (adherence to the law), (3) categorical imperative (universalizable action resulting in no harm done) and (4) ethical action evaluated in terms of ends not means.

Professional obligations include: (1) standards, (2) responsibility and (3) duty. The ethical dilemma occurs when opposing obligations are in conflict. Ethical controversies in librarianship are of two kinds: (a) professional neutrality 'no politics, no religion, no morals', and (b) professional decision making with responsibility for the action taken.

Library professional code consists of a commitment to flexibility, intellectual freedom, access to information, and personal integrity. The code requires: (1) excellent service, (2) opposition to censorship, (3) confidentiality of librarian-patron relations, (4) fair treatment of library staff, (5) incompatibility between personal and professional ethics, and (6) avoidance of conflict of interest. The code is not enforcing compliance and there is no clear consensus on specific ethical conduct.

"The most difficult and controversial dilemma faced by librarians is the duality of social responsibility . . . and the necessity to defend intellectual freedom . . . that is, the antagonism between advocacy and neutrality." (p. 94)

---- 1991:

This issue of Library Trends, edited by Hauptman, contains a number of essays on a broad and diverse range of subjects related to ethics in librarianship. They include confidentiality, reference in special libraries, censorship, relationships between ethics, technology and dissemination of knowledge.

The topics of interest to the profession in the near future will be "the dissemination of scholarly information and reevaluation of the peer review process, patron confidentiality, conflict of interest, technology, and information liability, including the possibility of malpractice suits." (p.200)

HAVARD-WILLIAMS, PETER, 1987:

Information existed since the beginning of communication, the information as a concept (organized information) emerged with the development of industrial society. Computerized information revolutionized information processing. the development of reprography made dissemination of information less expensive and the convergence of multimedia technologies facilitated global information transfer.

HAVERLOCK, RONALD G., 1977:

The library as a knowledge storehouse changes into the knowledge center by its involvement in 'problem-solving' processes. Problem solving is a part of a stimulus-response circle, a repeating process in search of satisfactory solution of information needs. The stimulus is started by felt need for information, the response is the action that satisfies it. The process consists of five steps: (1) felt need, (2) diagnosis (articulated as a problem), (3) search for solution, (4) choice of solution, and (5) application of solution, ending in need reduction.

Change specialists become (1) implementers, putting information into practice, (2) evaluators and catalysts, (3) need arousers, need articulators, and (4) process helpers teaching patrons to help themselves.

Problem-solving process is bi-polar: (a) internal closed system involved in the search within itself, and (b) external, open system searching for a solution outside the system. The two are linked through reciprocal simulation and feedback on effectiveness of resource person linking the user with more remote resources.

HAYES, ROBERT M., 1969:

The confluence of increased demand for information and the new technology resulted in the emergence of a number of information systems such as: (a) centers in technical fields, (b) data banks in social and political fields, (c) management information systems in business, and (d) command and control systems in military.

Hayes provides succinct definitions of the terms involved in the information systems. (a) Data is raw material, or a fact (a statement of truth). (b) Information is the result of processing data such as transmission, selection and analysis. (c) Knowledge is accumulated data. (d) Wisdom is a subjective, ethical judgment. (e) Information system is a complex of phenomena in systems such as physical structures, cybernetic responses to environment, chemical and metabolic balance or information processes. (f) Library in this context is a physical structure of physical records and mechanical flow of materials, viewed either as an administrative organization managing task performance, or as an information processing center acquiring and providing access to data. (g) Information science is the study of the information producing processes in any information system such as information science in genetics, social theory, or documentation.

"The purpose of information science is to develop tools for [complex] decisions, and its role in library education is to provide the student with the basic abilities to use those tools." (p. 224)

---- 1991:

The author defines "set of measures of information as that property of data (i.e., recorded symbols) which represents (and measures) effects of processing of them." (p.268). Relevant terms, historical background and problems related to the measurements of information are discussed in detail.

The data are measured at four levels as: (1) entropy of transfer, (2) weighted entropy in selection, (3) syntactic and semantic measures of structuring, and (4) dimensional reduction of data. "Each in the succession of measures generalized from the earlier ones, involving the addition of variables that characterize the additional level of processing." (Ibid.)

Among the relevant terms, Hayes reviews the perceptions of 'knowledge' and information by Boorstin, Nitecki and Paiasley. (a) Boorstin distinguishing between 'being informed' and nonsensical 'being knowledged'. (b) Nitecki describes knowledge on three levels: (1) as identical or nearly identical with information, (2) mutually exclusive, and (3) same when knowledge is content oriented and different when information is process oriented. c) Paisley refers to knowledge as 'functional characterization of information'.

Hayes points to the importance of (a) distinguishing between "the basic store of internalized information (with its structure) and 'intelligence' as the means for internal processing of it." (p. 275). Knowledge may be a part of individuals' internal cognitive structure, a part of social memory in the library collection of records, or in the computer's expert system.

---- 1993:

Information science should be discussed in the context of related fields such as librarianship, computer, management or engineering sciences. The definition of information depends on the processes that produce it, hence it can be understood only in the context of a system that produces it.

Information system is a part of a more general system that creates information. Hence, information science is defined as "the study of information producing processes in any information system in which they may occur" (p.368); it depends on methodologies used in the study of phenomena in related disciplines. Among information systems relevant to information science are: computer system processing data, computer-based information science utilizing computer techniques, library and information centers and social and biological systems.

Initially, information science education (a) focused on its technical and theoretical aspects (Slamecka, Yovits, and Robert Taylor), or (b) was considered an integral part of library science (Don Swanson, Perry Kent, Allan Goldwyn, Robert Haynes, Harold Borko and Allen Kent).

---- 1994:

"Librarianship is the profession concerned with preserving the records of society and providing access to them and their content. 'Library science' is the body of techniques that underline practice of librarianship." (p.275) "'Information science' is the theoretical study of properties of recorded symbols and of means by which they are processed. Such a study has roots deep in philosophy, mathematics, science, and scholarship." (Ibid.)

Among other terms used for information science (a) 'documentation' refers to either (1) physical and conceptual aspects of information, or (b) classification of documents. 'Information retrieval' focuses on users interaction and search strategy, while traditional reference concentrates on library resources. The differences between the meaning of these two terms are minimized with the introduction of computers and new focus on question-negotiation processes.

Information science, considered a natural science, stresses acquisition of new data, its indexing and abstracting; the humanistic and social sciences approach stresses analysis of past records. Information system analysis provides tools for accomplishing informational objectives; information systems design develops alternative means for these processes.

Of particular interest to management schools are: management of information, operations research formalizing decision-making processes and the General Systems Theory. Computer aspects of information science are thought in engineering schools.

"Together librarianship and information science share concern with each of them, but they approach them from different perspectives and with different priorities. Each of these threads not only interweaves across librarianship and information science but within each other." (p.280) "The richness of the fabric of relationships thus defies analytical description but is exhibited in the daily interaction between these two fields." (Ibid.)

HAYES, ROBERT M., and others, 1964:

The essay discusses three views relevant to the philosophy of librarianship.

(a) Robert M. Hayes, an information scientist endorses the view that the records of bibliographical resources should be considered as a total system. He believes that information science will become an integral part of library education, representing the theoretical foundation of librarianship.

(b) Ralph H. Parker, a university librarian distinguishes between two conflicts in the philosophy of access to libraries and books: (1) preference for the direct access to books; the bibliographic devices such as indexes and catalogs are needed only because of the inadequate system of books shelving, and (2) consideration of bibliographical guides as the best access to the collection; stack arrangement is necessitated only by inadequacy of bibliographic control. Browsing is an admission of inadequacy of indexing.

(c) Gilbert W. King points to the structural nature of library information that is as complex as language itself.

HEILIGER, EDWARD M., AND PAUL B. HENDERSON, 1971:

Management system influences physical and environmental systems by manipulating data. Data processing includes: discovery, identification, description, transformation, accumulation, manipulation and delivery.

Library system provides services of relatively small object-handling systems and data-handling system covering total holdings. The two systems are interrelated, defining the reality of a library as an information system, responsible for generation, collection, storage, manipulation and delivery of both data and objects. The objects (books) that are most available are least requested. Data deals with the representation of something, not the things themselves; they can be about the source, content, process or about the objects themselves.

In automation every object that enters the system is subject to absolute identity control. Identity is not embodied in the objects or data but arises from their existence. It assures the recognition of the retrieved objects that represent data.

The simplicity of number and alphabet systems conveys complex and abstract ideas. Physical objects and coded data about them are linked in preserving ideas in a physical format, by means of using different systems of coding.

"The library needs to reconsider what it is trying to accomplish and then to explore how the goals can be served. There must be minimal concern for human data processing, but great concern for human convenience. There must be clear recognition of the hardware that serves the needed functions and less concern for the functions that suit the equipment." (p. 232)

HEILPRIN, LAURENCE B., 1979:

Heilprin suggests that "two obvious functions which, adopted in time, might maintain its competitive independence in the information ecology [are]: systematic continuing education during the professional life of the community, and community support of and participation in research on the fundamentals of the information process. The two are not independent but together 'necessary and sufficient'." (p. 389)

Library community can be preserved in the rapidly evolving environment by striving for efficiency in carrying present functions, by supporting research in information science and by continuing education of librarians in science, technology, and in skills and forms of information science organization. "Only in this way could a well-balanced system be set up, a system with scientific leadership generating its own adaptation and controlling its own internal feedback of knew knowledge [allowing] the community both [to] perform its essential functions and . . . compete for continuity in the ecology of information organizations." (p. 393)

---- 1985:

Information theory is considered a necessary but not sufficient aspect of information science. Shannon's theory of communication is not fully applicable to information science because it deals only with statistical properties of data and Gaussian noise, independent of communication channels, while information science is more concerned with more difficult filtering of system-depended noise.

On the other hand, information science is closely related to evolutionary theory. "The process, 'becoming informed' must have arisen through adaptation by organisms of cognitive/affective patterns mapped onto some parts of themselves for their instantaneous . . . long term self-regulation." (p. 62)

The receiver and user of information (observer/responded) are essential in information science. The process of becoming informed relates to the interaction between prior, internally stored and new information. The internal information is both cognitive and affective; the "memory stores much of what sensors receive and internally modify, together with the responsive feelings associated with the modified signals." (p.138) The human feelings such as love or hate, eluded external representation, creating 'a discontinuity in an information circuit' and constituted an important part of information interpretation.

Since the recipient is the principal component of information system, the interpretation is the principle issue. Furthermore, the theory-neutral methodology of observation is untenable; all scientific data are theory-ladden. "What is observable is strongly conditioned by, and relative to background knowledge, linguistic abilities, the development and conditioning of cognitive processes, and the causal processes through which the observer causally interacts with the world he studies. " (p.187)

HEILPRINN, LAURENCE B., AND FREDERICK L. GOODMAN, 1965:

"Searching for information in a collection of stored messages and searching for information in the process of education have been subject to and shaped by one basic constraint - the very limited rates of flow of information into human sense channels . . . each have surmounted the same difficulty in the same way by . . . homomorphic transformations on messages which greatly reduce their word (or bit) content while preserving certain minimum invariants which identify the messages . . . reduced further by means of the equivalence classes derived from the vocabularies in which the reduced messages are recorded." (p.163)

HEIM, MICHAEL, 1993:

Virtual reality defined as 'the totally inclusive computer simulation' is discussed in the context of philosophies of Plato, Leibniz and Heidegger. However, as pointed out by Patrick Wilson, the philosophical discussion is ornamental, "sometimes anachronistic and hyperbolic . . . the style definitively that of pop philosopher . . . all in all, this is not an impressive contribution to our understanding of the new electronic world." (P.Wilson, 1994, p. 88)

HEKTOEN, FAITH, 1982:

Basic in library services for children is the collection of material for all children from infancy upwards. The author quotes Pauline Wilson's definition of the philosophy of children service: "the intellectual scope of knowledge in children services is larger than the content of children book. It extends to the knowledge of society and all of its concerns." (p.26) It includes reading beyond a classroom, referring to a broad environment by developing children literary tâste and reading habit, with emphasis upon individual child sense of identity, emotional, physical and intellectual needs.

HENDRY, J.D.1988:

Importance of library services to underprivileged and poor people is based on professionalism of librarianship defined as a dedicated and caring public institution. A library is more than an information provider, it services cultural needs of a society.

"We in public service are abdicating our responsibilities not only by allowing the intellectual argument on the positive philosophy underpinning public service to be lost - but to be lost by default." (p.38) "The community services were provided by the community as a whole, for the benefit of the individuals in that community." (Ibid.)

HENNESSY J.A., 1981a:

How can librarians argue that their work is important and not be involved in politics? How can they reinforce an open democratic society, avoid partisan political positions, ignore the potential impact of libraries on political values and political authority, and at the same time exercise the judgment about who should get what and how?

"Aristotle's observation that inequality arises when two equals are treated unequally or when unequals are treated equally", ( pp.127-8) implies that a neutral library cannot disseminate survival information effectively. All people are equal, but some may become more equal as a result of political organization and political power, hence political information in libraries is crucial.

---- 1981b:

Librarianship of politics and the politics of librarianship are closely related and librarians operate within state and community environments. They consider themselves either as unrecognized legislators or as political victims. Individual librarians 'as guerrilla partisans' can determine their own and their profession's political status by participating in the politics of librarianship.

"Libraries have an important role in promoting political education and political literacy, even to the extent of challenging state power in precise ways and systematically working against the mainstream version of the librarianship of politics." (p. 251)

HENRY, W.E., 1917:

"The library is the instrument and the librarian is the social agent which brings the past to the present in preparation for the future, and thru these the individual is self educated for social ends." (p.351)

"Is there a body of knowledge and information covering the field and is that body of information well formulated and organized? If we answer in the affirmative . . . then there is a place for a profession and a place for a professional school which shall transmit and enlarge upon this body of knowledge and put into practice the doctrine which the school stands for." (p.352) Librarianship provides a great social service "not because the library is a greater service in the sense of greater value than any of the others, but because it is more comprehensive, more all inclusive than any other of the professions." (Ibid.)

HERNER, SAUL, 1974:

In the long history of librarianship there were more changes in the last 25 years than since the Gutenberg's movable print. Yet, the basic concepts of librarianship remain the same, following the saying by Alphonse Karr, that "the more things change, the more they remain the same." (p. 31)

Recent changes were introduced in the technological innovations of microforms, facilitating storage, searching and display of material, information storage and retrieval, adaptation of computers and documentalists interests in unpublished research reports.

"It is not enough . . . to continue what we have been doing, in abundance and with increasing speed, when we are not at all sure we should be doing it in the first place. We have to have a better understanding of the consequences of what we do and what we ought to be doing . . . different types of scholarly, research, and professional activities require different types of information support . . . different types of information are best sought by different means . . . the greatest scholarly contributors are the most efficient seekers and users of supportive information. What are we doing about those truisms? ... very little." (pp. 33-34)

---- 1984:

"Information science is the product of convergences of library science, computer and punched card science, R&D documentation, abstracting and indexing, communication science, behavioral science, micro- and macro-publishing, video and optical science, and various other fields and disciplines." (p.157)

Major contributions to information science include:

1945: Vanneaver Bush: As We Think, a hypothetical 'Memex' storing and searching device.

1948: Royal Society Scientific Information Conference initiated new type of information scientists addressing information and library techniques.

1951: Jesse Shera and Margaret Egan, Bibliographic Organization: provided anthology of trends in classification, indexing, forms of publication and searching. Taube's "Functional Approach to Bibliographic Organization," described bibliographic coordination, and Ralph Shaw's "Management, Machines and the Bibliographic Problems of the Twentieth Century", provided a critique of the use of available mechanical devices in a bibliographic search.

1953-59: Martimer Taube and associates. "Studies in Coordinate Indexing" introduced uniterm indexing.

1958: "Proceedings of the International Conference on Scientific Information" focused on intellectual and mechanical aspects of information organization, dissemination and users interactions.

1963: Joseph Becker and Robert Hayes, Information Storage and Retrieval; Tools, Elements, Theories, was the first textbook for information science as a discrete discipline.

1963: Science, Government, and Information Report ('Weinberg Report') dealt with relationships between private and government information groups.

1969: NAS/NAE Committee on Scientific and Technical Information, Scientific and Technical Communication delved in analyses of national and international information policy and technology

1973: Lancaster and Fayen's Information Retrieval On-Line was the first handbook for online searching.

1982: Lancaster's Libraries and Librarians in an Age of Electronics summarized the impact of computer and communication technology on librarianship.

Among other important contributions were: (a) Robert Fairthorne who provided analyses of the information science. (b) Eugene Garfield introduced science citation indexes. (c) John Mauchley co-designed first electronic computer ENIAC. (d) Calvin Mooers introduced terms 'information retrieval' and 'descriptors'.

HEZEL, LINDA and ANN R. JACOBSON, 1987:

This is the description of an inter-disciplinary curriculum in a nursing program. A nurse is considered a community resource broker in schools, churches, homes and work places. This role is not the same as that of the social worker or guidance counselor.

The objectives of the curriculum include (a) identification of clients' needs, (b) identification of community human care services, (c) linkage of clients with local resources, and (d) follow up review of information and retrieval.

"Information and referral is described as "a sequential process or continuum made up of specific activities that are pursued depending on the client's need or request." (p. 19)

HICKS WARREN B., and ALMA M. TILLIN, 1977:

The authors define "philosophy and goals of multimedia [as] service to the public, accountability, and the enhancement of human life through the effective management of the resources of human knowledge." (p.15)

The philosophical concepts are discussed in the context of the systems, focusing on the three key notions: (a) purpose (preset objectives), (b) function (operating procedures), and (c) parts (separate areas of activities within the system).

The procedural steps in the systems methodology include: (1) purpose identification, (2) goals statement, (3) definition of objectives, (4) plan for implementation, (5) implementation (effecting the system), and (6) evaluation and revision.

" These steps involve, consecutively, the orderly statement of philosophy and purpose of the intended system, translation of these purposes and values into broad goals and desired outcomes, the definition of breakdown of these goals into measurable objectives in terms of validity, feasibility, measurability, and related factors and then the design of a plan from . . . alternatives which can permit effective implementation and evaluation of the process used to get the system into action." (p.16)

HOADLEY, IRENE B., 1991:

The author discusses the impact of a shift in librarianship from ownership to access, and from free to paid library services. Although there is no one model for all types of libraries, the author advises that "it is time to put aside access versus ownership and concentrate on access and ownership. It is time for librarians, publishers, and utilities to begin to work together to provide a future that serves our users rather than ourselves . . . to determine our future rather than having someone else do it for us . . . and move forward to a future that meets the needs of our users." (p.195)

HOARE, PETER, 1987:

Throughout history libraries were affected by cultural changes. For example, the political importance of the libraries was acknowledged by people like Martin Luther and Lenin, both using libraries to spread their doctrines.

Library response was twofold: (a) cultural changes were reflected in library collections, and changing role of the librarian and (b) emergence of a role as agents of change themselves, illustrated by library changing missions throughout history.

HOBBS, JERRY R., and ROBERT C. MOORE, 1985:

Authors discuss the scope of knowledge programmed in artificial intelligence (axiomatization). One of the problems is an exclusively technological approach to artificial intelligence, which focuses on a computer programing rather than on human models, or psychological motivation on a cognitive level below the level of consciousness.

For example (a) the concept of 'expert knowledge' is based on specialized knowledge in a particular expert system, (b) in cognitive anthropology the focus is on the study of 'other' cultures; in the naive theory one attempts to elucidate level of knowledge so basic that it is common to all cultures, and (c) in lexical semantics the difference is made between linguistic and general knowledge, focusing on the former, while the distinction is overlooked in naive theory.

The extend of knowledge base axiomatization is determined by the number of primitive concepts included in that axiomatization (the core knowledge). The core knowledge is based on the commonsense theories about the world, as held by ordinary people.

Commonsense theories include axiomatization in physical (material), psychological (beliefs) and social (values) systems, referred to as 'naive' theories (e.g., naive physics). Each axiomatization focuses not on the things as they are, but as they are ordinarily conceived by non-specialists.

New domains are learned by using previously developed theories as metaphors for the new domain. Although formalization as a tool in research is necessary in every discipline, one has to avoid "the imperialism of formal logic, the tendency of formalizers to look down on informal work, an instantiation of the more general condescension of the hard sciences toward the soft." (p.xxii) "Formalization is a trick that can be learned. It is no substitute for insight. (Ibid.)

HOEL IVAR Hoel, A.L., 1991:

Hoel reviews the possible use of philosophical hermeneutics of experience as a model in information science research. The approach is based on the philosophy of Hans-Georg Gadamer and his 'principle of effective-history'. "The main idea is that text, through the time it has been subject of interpretation, has been the generator of experience that unescapably plays a role when [interpreted] today . . . We cannot ourselves choose the viewpoint from which we want to understand, it is given to us, mostly unconsciously, by effective-history." (pp.77-78)

HOFSTADTER, DOUGLAS R., 1985:

In the chapter discussing his philosophical interpretation of artificial intelligence, the author makes some observations about information-processing model of cognition. Using the example of pattern recognition of letterforms, he focuses on the human mind's ability to recognize and reproduce forms.

Hofstadter criticizes the researchers in artificial intelligence for their rigidity and wide scope, contradicting the scientific method of focusing on the simplest aspects of the problems. For example, "if you choose to get involved in medical diagnosis at the expert level, then you are going to get mired in the host of technical problems that have nothing to do with how the mind works." (p. 637)

These studies often overlook subcognitive activities in the mind. People perceive patterns often without knowing where to look for them. It is the common sense, a domain-independent, ability to select and find unanticipated similarities between different concepts, without thinking. "Something fundamental is missing in the orthodox AI 'information-processing' model of cognition . . . some sort of substrata from which intelligence emerges as an epiphenomenon." (p.643).

There is a difference between the properties of the objects and the statistical ensembles of them. Symbols can be computational as tokens (e.g., ASCII codes of 'seven bits'), but not as symbols that symbolize or denote meaning. The latter meaning of symbols reflects brain's structure, illustrated by the metaphor of an ant colony. Individual ants, like neural firing in brain, are moving around, touching each other, forming larger teams, like pesters of neural patterns, triggering other patterns without any central manipulating program. From such activities in the brain various symbols emerge, uncontrolled by our will or any logical rules. "We cannot decide what we will think of, nor how our thoughts will progress." (p. 648). Symbols manipulate our mind by a large number of interactive subcognitive structures.

Data by themselves do not carry meaning, they are triggered by patterns represented by symbols, which however,"do not symbolize specific, real, physical objects. The fundamental active symbols of the brain represent semantic categories - classes in AI terminology." (p.651) Thus, "subcognition at the bottom will drive cognition at the top . . . [activities] at that cognitive top level will neither have been written or anticipated by any programmer. This is the essence of . . . statistically-emergent mentality." (p.652)

It is not an individual ant, but the colony as a whole, that works toward some goals. Only by considering the totality of such work, the purpose of ants' activities can be statistically determined.

Mass communication is defined as a transfer among groups that a single individual could not pass to another." (p.662)

In computing thoughts, or information processes, computed are the descriptions of potential, alternative behavior of the though-processes, not their exact patterns.

The methodology suggested is that of a commonsense, or geometric, rather than algebraic, mathematical approach. In the algebraic approach "long sequences of operations are compounded out of shorter sequences," one relies on the sequences of operations as wholes. In geometric approach the focus is on individual sequences, each justified in terms of the overall pattern. The former approach is efficient but risky, the latter inefficient but reliable. (p. 354)

HOLLADAY, JANICE W., 1982:

"Academic libraries, in general, do not provide information; they provide access to sources of information. The shift to provision of information in an academic institution requires the librarian to be proactive and involved in the substantive work of the institution." (p.266) The shift to the role of a mediator between library patrons and the recorded resources requires a skill in interpersonal communication, by which one can relate information needs of individual patrons to the available resources.

HOLLEY, EDWARD G., 1985:

"The author discusses the types of knowledge that should define the academic librarian. Four types are mentioned; (1) a background in the history and development of higher education, (2) an appreciation for the history of scholarship and learning, (3) an understanding of how knowledge is obtained in various disciplines, and (4) an ability to evaluate research findings. Widespread ignorance about the nature of colleges and universities - their history, mission, and politics, often leads to counter-productive action." (p. 462)

Commenting on the paper, (a) I.B. Hoadley note that library continues traditional service, but in a newly automated environment; (b) Herbert S. White concludes that "in academic libraries there have been technological changes, but virtually no philosophical ones . . . we haven't examined any of the premises of the information gathering, analysis, and dissemination process. Until that happens, the changes continue to be cosmetic." (H.S.White, 1985,p. 477).

HOLLIDAY, S.C., 1939:

Instead of being a 'literary gent', considering beauty of thoughts more important that thoughts themselves, or a middleman for literary art, librarian should be a literary critic in book selection, and be "a scientist of analytical investigation on the one part, and ordered synthesizing on the other . . . devoted to what has been termed 'the service of unified knowledge,'" (p.35) making available to everybody an 'ordered statement' of the present state of knowledge in all areas of learning.

HOLLNAGEL, ERIK, 1978:

Hermeneutics is an understanding of a text by a dialectic process between the whole and its parts. Cognition is a perception and categorizing. The two concepts are similar in the use of analysis by synthesis. They differ in (1) validation of the interpretation of a meaning. In hermeneutics it is approximate; in cognitive paradigm the external validation is a consequence of a direct communication between the sender and recipient of a message. (2) In hermeneutical paradigm process of understanding is conscious; in cognitive paradigm it is unconscious, automatic. However, both approaches point to the same phenomena in different but compatible ways; the differences express the way the two paradigms appear rather than their basic structures. Both are weak in their generation of an initial guess.

Recent interest of cognitive psychology in non-experimental phenomena such as understanding, introduced new vocabulary (information, input, processing, coding, subroutine) and use of computer, serving as an intermediary between behavioral observations and introspection.

Understanding is the object of analysis and the tool by which that analysis is carried out, thus leading to the notion of 'understanding of understanding', involving two issues: (1) the event of understanding the text, and (2) understanding of 'understanding and interpretation' as such.

The hermeneutical circle is a formulation of a principle of the global meaning of a text, articulated through a process in which the meaning of the parts is determined by the whole. It allows for description of understanding without making any assumptions of a specific kind of understanding in a dialectic process.

The dialectic is not only between the whole and its parts but also between comprehension and explanation as two ways of describing the same phenomenon. The part-whole dialectics focuses on the interdependence between understanding parts and the whole, producing an approximation to the intended meaning.

Explanation is an analysis of the whole into parts, comprehension a synthesis of the parts into a united whole - both repeatedly interacting between themselves (a hermeneutic circle), each bringing new results based on previous understanding. Thus text initially can have a number of different interpretations or meanings, the intended meaning is not immediately given; one assumes it and then validates the guess in the text.

In cognitive psychology the interest is in specific instances of understanding in terms of how we perceive, categorize, recall or retrieve specific instances. In pattern recognition the problem is to find a recognition function that could pair signals and messages. The signal can be a sentence in one language and a message in another. Thus the transformation of a signal into a message requires something functionally equivalent to an understanding of the meaning in the signal.

In the cognitive analysis-by-synthesis procedure (analysis achieved through internal synthesis of signals) the understanding of a signal is achieved by producing hypothetical signal from a guessed message; received signal is analyzed, the message is guessed and used to synthesize a hypothetical signal, which then is compared to the actual signal. The analysis is completed if the two are identical or very similar.

Thus the understanding, which takes place in a real time is a reciprocal interaction between two processes; one produces a guess or an expectation of a meaning in a message, the other tests this guess; both resulting in a relative understanding of the message.

The understanding means that a relationship has been established between the present message and experience, or base knowledge of an individual; the paradigm of understanding must contains a description of the way this relation is established. The relation must be particular so that what is understood is the meaning intended by a sender.

The process of understanding is thus twofold: (1) generating the possible meaning of the message, (2) finding its intended meaning, relating a reciprocal interaction between generating and producing a guess and testing its correspondence to intended meaning.

The purpose of a hermeneutical circle is to produce not the correct understanding or interpretation of a text, but the best approximation leading to a best Gestalt, contingent upon time and amount of resources available.

---- 1980:

Rigorous definition of information is not as essential as similar definitions in natural sciences because of its relation to the behavior expressed in language.

More important is the concept of uncertainty and lack of information. A comparison is made with psychology, economics, sociology and law, which experienced a similar problem. Natural sciences deal with issues not easily observable in everyday life, and hence linguistically nonexistent. Special language is needed to study these phenomena not described in natural language. In behavioral sciences we know what we are talking about without first rigorously defining the experience. But it also leads to a philosophical question of how we know what other people know and the validity of introspection and self-reporting. The major concern is however on the behavior of individual on the collective level.

Information science is concerned with the use of information by human, and involves storing, processing and transmission by machine; the base for information science is therefore the experience in searching and using information. The desire for precise definition of that discipline relates to information theory, in which however the concept of information was never meant to express the meaning of the message. Yet, information science is precisely interested in the meaningfulness of information and its usefulness to the user. It is concerned with systems, human and/or machine, which are retrieving rather than just receiving information. Information theory focuses on 'receiving', information science on the 'searching system'.

"The recipient recognizes that there is something wrong with his state of knowledge concerning, say, some topic or situation, and wishes to resolve this anomaly . . . it concerns what the recipient does not know, rather than what he knows he needs to know." (p.185)

Incomplete knowledge is not an obstacle in communication but its cause; however, no communication is possible if there is no common knowledge shared by the communicants. This is of particular significance in hermeneutics.

Information science is an incomplete, anomalous state of knowledge ('ASK'). "The only essential difference between the ASK paradigm applied to information science and *within* information science is probably that in the latter case one system, e.g., the librarian's, has a tolerably precise definition of the topic available, although not immediately accessible, while in the former case no one knows more than the rest." (p.186)

HOLROYD, GILEON, 1972:

Sociology of knowledge is defined as a study of relations between thought and society. "From the standpoint of librarianship, much of our view of knowledge appears to be socially relative. Classification schemes for books may be devised in relation to the library's users and its stock . . . To evaluate library materials, we often use the informal or published opinions of others. Many of our value judgments can easily be traced to our perception of readers, and librarians, collectively." (p. 55) "It may be that one of the most valuable aspects of the sociology of knowledge lies in its challenges to accepted definitions . . . it may widen very considerably the accepted notions of what is knowledge, but it has to leave to philosophy the question of 'what is truth?'" (Ibid.)

HOLZNER, BURKART and JOHN. H. MARX, 1979:

Knowledge in contemporary society is analyzed in terms of the interpretations of realities by disciplines involved in "the production, organization, application and utilization of specialized, technical knowledge [that] has transformed social life by creating a post-modern, knowledge-based society.
(p. xvii)

Sociology of knowledge considers knowledge as a dependent variable associated with special interests, the approach in this book considers knowledge an independent variable affecting interrelationships between cultural symbol systems and individual cognitions.

Fritz Machlup interpreted knowledge in the context of economic environment, produced and accessible to different economic groups. George Gurvitch focused on the impact of social groups such as a city, on patterning, storage and retrieval of knowledge. The cultural processes discussed in this book are related to the systems for dissemination, distribution, storage retrieval, application and implementation closely intertwined with the knowledge production systems.

"Libraries represent basic knowledge availability systems that are far more than mere repositories for storing books. Changing library designs over the past hundred years has reflected and been closely associated with changing conceptions of the underlying rationality and order in knowledge . . . [the proliferation of new activities] have led to the emergence of new professions and disciplines whose main intellectual and practical responsibility is for management, storage, and retrieval of bodies of knowledge in a formal, rather than a substantive way. . . . Instead of the earlier predominance of a substantive focus on the classification and storing of relevant bodies of knowledge, these new disciplines domains, and techniques focus on structures of relevance, ways in which information can be traced within bodies of knowledge, and ways of charting the various channels of knowledge flow through social systems." (pp.235-6)

HOOKWAY, H.T. 1974:

Librarians should not be preoccupied with advance management considered as end in itself. They ought to be professionally and technically competent, sensitive to cultural changes in the society, performing educational functions, utilizing internationally available resources.

HORN, STEVEN, 1973:

The author opposes the notion that "the philosophy of librarianship must serve as a platform for action in ensuring the information utility network is free of any social ideological bias." (p.2216)

Since librarians probably will not be able to attain full control of the information utility, they should attempt at least to participate in the decisions concerning that utility. "Adoption of this role for librarianship, backed by research and by philosophical and empirical elaboration, would allow us to assert our participation in control of the information utility on our own merit. It would also allow us to assert a philosophy of service consonant with the social implications for our [value-oriented] activities." (Ibid.).

HOROWITZ, ROSARIO GASSOL DE, 1988:

This discussion of emerging librarianship in the Third World in terms of philosophy of librarianship, focuses on librarians' dilemma (preservation vs. dissemination), epistemological dualism (objective, positivistic and subjective humanistic definitions of knowledge), and Ortega y Gasset's doctrine of the point of view, stating that the definition of knowledge is relative, subject to different viewpoints, each complementing others.

The author identifies three approaches to philosophy of librarianship: (a) reductionistic, (Christ) (b) functional (Lancaster) and metaphysical (Kaplan, Shera, Nitecki and Wright).

Horowitz offered her own, tridimensional framework for the development of the needed theory, research and curriculum. She expanded Nitecki's, conceptual, contextual and procedural definitions of librarianship by considering library dimension in terms of human cognition (conceptual), related to its own culture (contextual) and performing information engineering function of interrelating library methodology with the technology of communication (functionalism).

Librarianship "has traditionally tended to parallel closely the prevailing communication technology but has been unable to develop strong theoretical foundations based on an understanding of human nature and human thought processes . . . development of such foundations constitutes the most urgent task confronting librarianship in the so-called Information Age." (p.121)

HOULE, CYRIL O., 1946:

Concerns about books, their dissemination or adult education must be based on the philosophical principles defining librarianship as a unique discipline. This can be based on John

Dewey's pragmatical philosophy of education which "means the process of changing people's skills, knowledge, attitudes, and understanding so that they might be helped to formulate and achieve worthwhile social and personal goals." (p. 25)

This approach requires that a distinction be made between good and bad educational experiences. Good experiences must be continuous in an environment interacting with personal needs and purposes of an individual patron and the goals of the community served. However, these principles cannot be applied mechanically, but used "as means to broader understanding as well as improved practice." (p.47)

A traditional library can do without philosophy of education by using customs and established routines as guidelines. "Progressive librarians cannot rely upon established traditions and institutional habits, they must . . . be directed by ideas which, when they are made articulate and coherent, form a philosophy of education." (Ibid.)

---- 1946a:

The nature of philosophy of library service is practical, dealing with what should be, it is normative and not theoretical, descriptive.

Practical philosophy "achieves valid meaning only in terms of its operations." (p. 1514) Its objectives are educational, informational and aesthetic, based on research and providing recreation, adjusted to the multi-purposes of its parent organization.

These objectives include goals that are consciously aimed at, hierarchical in form, specific, discriminative, dynamic and providing a choice. "In the formulation of objectives . . . it is always necessary to move simultaneously in two directions. One is to formulate broad goals which seem to be desirable and to see how they may be achieved . . . The other is to examine present practices, choose which appear to be good, and then attempt to discover in terms of principle why they are effective. Also, one needs to examine the present desires of the borrowers . . . in order to see what kinds of things seem real and important to them." (pp.1600-1)

HOUSER LLOYD J., 1982:

Library science is a science without strong theory, failing to distinguish between hermeneutics philological clarification of texts that leads to the scholarship of humanities and knowledge produced by science.

"Library science educators part company with philosophy and prefer non-scholarly behavior in their efforts to settle doubts and fix belief. It is disturbing because there is, to date, no evidence in the history of scholarship, in the history of philosophy, or in the history of science, that authoritarian behavior is, in the long run, superior to knowledge . . . library science educators have chosen a lonely, difficult, and probably impossible goal for their enterprise." (p.105)

---- 1988

The essay discusses the nature of information science and its relation to librarianship by analyzing papers published in JASIS. The author concluded that information science is merely library science. There is no scientific community of information scientists and hence there is no information science as an independent discipline.

The author asks three questions concerning the domain: (1) are information science concepts unique to information science? (subject of the discipline)? (2) are the researchers in this field members of an older discipline? (scientific community); and (3) does the discipline focus on hypothesis testing? (scientific techniques).

Bibliometrics and its predecessor a statistical bibliography are not a traditional subject in librarianship. They were introduced by catalogers' investigation of literature growth in 1922; while the literature search belongs to any field of scholarship.

Computers were first installed in 1941, some 30 years before information science was formed. Hence the claim that information science is uniquely different from library science is not supported by empirical, philosophical, definitional, or sociological evidence.

HOUSER L. and ALVIN M. SCHRADER, 1978:

After reviewing a number of definitions of the field, the authors concluded that "there is no consensus among librarians and library science educators on what library science is. Some admit clerical operations in their definition of library science. Others emphasize the administration of libraries. Some say what it is not. Others compare it unfavorably with another field. None attempts to define library science as a specific study of a dynamic set of problems." (p.140)

Authors suggested as a solution a scientific-professional model, based on the following philosophical framework:

(1) "Every scientific field is defined by the problems which it identifies and chooses to study and solve." (2) Every field consists of such problems; (3) the problems are unique to that field; (4) solutions depend on defined methodologies, which can be tested and verified by others; (5) theory describes, explains and predicts the phenomena under study; (6) knowledge of the field is described in scientific publications; and transmitted to the students; (7) all are a functions of an intellectual and social climate. (pp. 155-6)

There are two essential conditions for a success of that model: (a) existence of needs for information in a society, and (b) consensus of the community about the problems related to information needs. The growth of information industry and interest of the government are important supportive conditions.

HOUSTON, GEORGE, 1989:

Ancient Romans image of librarians was quite different from the contemporary one. They saw librarians as arrogant, considering themselves superior to everyone else, well paid but also uncorruptible. They were envied for their good look and dress, but disliked for their pose. Yet librarians were more than any other profession eagerly and totally idolized.

HYNES, ARLEEN McCARTY, 1987:

'Biblio' as the root word for literature encompasses all media; therapy as a healing method is a result of an integrating values and action. Bibliotherapy stands for media used for growth and healing. (p. 167)

The goals of biblio/poetry are developmental in libraries, but in hospitals and prisons they are clinical. The interactive bibliography produces self-awareness in the readers different from one offered by private introspective reading, by involving the group reactions and bibliotherapist guidance. The process involves variety of creative therapies, such as art, drama, music, psychodrama and biblio/therapy.

"It is in the dialogue between the facilitator and the participant about the unique reaction to the literature/media that values can be recognized, clarified, and, through the emotional and cognitive involvement of commitment, be combined to bring about action that will make values live." (p.170)

HANSON, CARL, A., 1994:

The author discusses the role of John Cotton Dana in the period following the 1889 fundamental changes in librarianship, which created a background for information science. Among Dana's major contributions was his implementation of the ideas of direct access to the library collection and a utility-based collection development policy.

In that period public library struggled with the dilemma created by the theory of social uplift through high quality literature and users demand for popular reading material.

"By the early twentieth century many public libraries had abandoned the dogma of uplift and taken the role of mediators between a swelling tide of publications and voracious reading public." (p.187) The changing philosophy shifted public library self-definition from apostles of an ideology of culture to more accessible, and utility-driven library collections.

IBEN, ICKO, 1936:

The author supports Danton's call for philosophy of librarianship, which resembles John Dewey's emphasis of the importance of theory in teachers' education. The two concepts suggest a need for integration of different tasks within, and between libraries, using a common denominator. That denominator, quoting Shaw (1926), is "to understand, to sympathize with, to urge on, to direct the thinking of, to transform and develop the ideas." (p.225)

Iben agrees with Danton (1934) that the most important advantage of professional philosophy will be "the establishment and recognition of the library as a vital creative, educative force for the advancement of civilization." (p. 225)

---- 1962:

In his review of de Vleeschauver's book (1961), Iben focuses on the "concept of the library as a cultural and humanistic element as opposed to a view of it as a purely utilitarian and mechanical device" (p.305)

Deontology differs from general ethics by its emphases on the specific listing of professional obligations. It focuses on the obligations of an individual librarian to adapt his actions to the objectives of the library he works in, creating a "symbioses of individual and institution," and an atmosphere of "complete tolerance and unobtrusive pursuit of the ideal or perfect impartiality" maintained by a library serving a pluralistic society. (p.308)

ILLICH, IVAN, 1978:

Illich maintains that the librarians are guardian of the books; all they can do is to create tools, making books more accessible to patrons but they should not mediate between them and their reader. He was disappointed with the Library of Congress automation system as not contributing to the expansion of human mind, pointing out that librarians, can at times be a part of the problem instead of the solution.

INGWERSEN, PETER, 1982:

The essay focuses on user interaction with library collection, user-librarian negotiating processes and librarians' search methodology in public libraries.

A possible correlation is suggested between (a) open search and symmetrical negotiations, where users provide librarians with additional information about their needs, and (b) asymmetrical negotiation and semi-fixed mode, with limited information about users' needs. If neither approach is successful, a librarian repeats the procedure that has already failed, by reexamining the search motive, routines and material used initially, reexamining search concept and its possibilities.

Important is the awareness of the consequences that follow selected search method in response to the patron's needs, that is converted into the information retrieval structure. The process can be better understood in terms of the cognitive theory of mental processes.

---- 1984:

The relationships between information retrieval (IR) and psychology is discussed in terms of the generation, acquisition and use of knowledge. Perception, information processing, thinking, representation, communication and categorization of knowledge are considered in IR processes as important problem-solving operations. "It is the human mind which has to come up with the flexible strategies, tactics and ideas that may suit the system" rather than the IR system itself. (p. 86-7)

Three approaches are of importance to information science:

(1) Cognitive view that "any processing of information . . . is mediated by a system of categories or concepts." (p.87) "Information is that knowledge - or conceptual context - which has to be perceived or produced by the mechanism - for example, by the mind of man." (Ibid.)

(2) Paradigm theories of IR provide a common knowledge structure.

(3) Popper's three worlds (physical, subjective and objective) are interactive. Only users and information specialists can retrieve the accessible knowledge (subjective W2), since knowledge cannot restructure itself (objective W3).

IR provides physical or bibliographic access to documents (physical W1).

The author recognizes four stages in the development of IR methods: (a) monadic (each information unit is handled separately as self-contained entity), (b) structural (information is considered as a classified complex structure), (c) contextual (information disambiguates the message, e.g., natural language), and (d) cognitive or epistemic (information processing, as in knowledge representation)

There are two kinds of knowledge structure: episodic (private knowledge) and semantic memory (formal knowledge shared by others). In information science distinction is made between two knowledge structures: IR and conceptual."Both are contained in episodic/semantic memory according to the experience of the individual." (p. 93)

---- 1991:

The framework of information science is discussed in terms of major areas of activities that include: (1) bibliometrics focusing on quantitative aspects of written communication; (2) information management that includes quality of text information system, (3) design of information retrieval system, and (4) information retrieval concentrating on information processes.

The author noted a general shift in research toward accessibility and use of stored knowledge, based on a holistic interpretation of information transfer. The trend is pronounced in the shift (a) from documents to information transformed into knowledge, (b) from technology alone to one related to human issues, and (c) from purely scientific interpretation of information concept to its broad definitions, considered in terms of accessibility and use of information.

INWAGEN, PETER von, 1984:

Future computers will be able to do only what present computers are doing, but faster with greater storage capacity, but none will be able to think.

Thinking is either a scientific or factual issue of programing certain functions (simulation); or a philosophical question of what is thinking. A computer running a letter-perfect program "would be simulating the presence of a thinking being. It wouldn't itself be thinking." (p.18)

Two arguments support the notion that computer can think: (1) Thinking is perceived through behavior. A completely paralyzed person who could type, would express his thoughts through typewritten messages - the typewriter becomes a vehicle of man's thoughts. (2) We think with brain, which is an information-processing device, independent of what the brain is made of or how it is organized. Computer running a letter-perfect program is also an information-processing device.

However, the two examples do not distinguish between thinking and its simulation. Perception cannot be explained on mechanical principles; "it is possible to create a perfect simulation of the presence of a thinking being . . . without creating a thing that really is thinking." (p. 21)

IRWIN, RAYMOND. 1949:

"This so-called philosophy of librarianship is . . . an elusive thing, as difficult to catch as any butterfly." (p.12)

The term 'philosophy' may applied to (a) philosophy proper (e.g., logic, metaphysics, or ethics), (b) its relations to other subjects intimately connected in principle (e.g., philosophy of science based on experimental and inductive knowledge, or philosophy of religion based on a priori reasoning), (c) knowledge in general (study of librarianship in general), and as (d) ruling principles (aims, objectives and ends of any branch of knowledge, including librarianship).

The last application of the term 'philosophy', "surveys the subject as a whole, studying its relations to associated subject as a whole, defining its special purpose and enumerating its starting point and general line of argument. This is not philosophy, but it is nevertheless a necessary approach to every subject; and we may fairly conclude that it is what our American colleagues mean when they speak of the philosophy of librarianship." (p.23)

Principles of librarianship refer to its aims and scope and its relations with other branches of knowledge:(1) with history: same material is preserved by librarians and interpreted by historians; (2) with science: collection of scientific materials such as periodicals or abstracts; (3) with social sciences consideration of readers as a group, as an abstraction used for statistical purposes; although essential is the service to an individual; (4) with education: provision of materials offering guidance and advice on individual bases; (5) with literature: a library provides historical bibliography and literary history; (6) with ethics: importance of book selection (selecting books of value) and of access to collections; and (7) with psychology: librarians considered as the reader's other ego.

In conclusion, "the term 'philosophy of librarianship' has no meaning other than the study of the theory or principles of this branch of knowledge. Such a study must include (a) a definition of librarianship, (b) a statement of its purpose and aims and (c) a statement of its relations with other branches of knowledge." (pp.47-48) Irwin maintains that the essence of librarianship is the bibliography.

---- 1958:

The study of the history of librarianship is not popular partly because it requires a considerable amount of reading not directly related to practical necessity. This changing attitude toward the past, minimizes the dependence on tradition. "Never has so much seemed so out of date as it does today, whether it be in politics, or in science or in a small field such as library economy." (p. 510)

The study of history offers: (1) The ability to view the profession from the historical perspectives; "only those who have achieved this kind of detachment are qualified to talk about the philosophy of librarianship." (p.512) (2) A sense of proportion by considering each individual as a small part of the universe. (3) An intellectual sympathy for the accomplishments of the past and curiosity about the future, a sense of librarianship as a whole.

"To learn about one is to learn about the other, and in this common ground we meet with the origins of every science, every art and every philosophy that man has developed." (Ibid.)

---- 1960:

Being in love with books means being acquainted with masterpieces of literature. The person "who has an abundant curiosity about the world in general, and a special interest in one or two particular fields of knowledge . . . [is a person] whose work in a library is nearly always successful." (p. 315) Librarianship ought to be build on book knowledge, how it was produced, its physical appearance, contents and use.

---- 1961:

"There has of late been some discussion of the 'philosophy of librarianship'. This high-sounding phrase usually signifies little but the purpose of librarianship. In many cases the purpose of a given library is explicitly defined; this is true wherever the subject field and membership is restricted, as with the libraries of learned societies, and academic or scientific institutions. Consideration of purpose mainly arise where there are no such limitations, i.e., with non-specialized libraries open to the general public.

Broadly there are three possible purposes of a library: teaching, research, and entertainment; and these can be achieved either singly or in any combination by any library. In practice, however, the entertainment value of books is only stressed by the general library, and it is in this field that differences occur." (p.200)

IRVING, RICHARD D., 1988:

Public policy is defined as the "formation of policy by government institutions." (p.1) Information explosion increased the production of printed and non-printed raw data, accelerating the research and generating information.

The information can be interpreted either as (a) an economic commodity subject to the manipulation of a free market, or (b) as public good implying a free flow of information.

"The pervasiveness of government involvement in modern society has elevated in significance the public policy aspect of almost every social issue [and] librarians certainly have a vested interest in the relationship between public policy and information." (Ibid.)

ISAACSON, DAVID, 1982:

"The free, speculative, creative, and critical play of the mind is far too' heady' an atmosphere for many libraries." (p. 228) The term 'elitist' is applied to the intellectuals accused of anti-democratic bias, male chauvinism, with judgmental, prejudices values.

However, the older definition of the intellectual elitist refers to "a person who is dedicated to discovering the best ideas, the most elegant solution to a problem, or the most precise answer to a question." (p.229)

Various connotations of the anti-intellectualism are seen in so labeling specialists dedicated to controversial issues, or to bookish persons. Intellectualism is rejected as a skill not necessary or even detrimental to library work, as demonstrated by a false dichotomy between theoretical foundations of librarianship and nonintellectual practice of working with books as tools, not as scholarly subjects.

Pseudo-intellectualism is illustrated by confusing source of information with knowledge, uses of pseudo-scientific jargon, making simple concept sound complex.

"The chief characteristic of an intellectual is the capacity to make discriminating judgments; the chief characteristic of an anti-intellectual is to 'discriminate' against that very capacity." (p. 232)

ISER, WOLFGANG, 1978:

Reading "sets in motion a whole chain of activities that depend both on the text and on the exercise of certain basic human faculties. Effects and responses are properties neither of the text nor of the reader; the text represents a potential effect that is realized in the reading process." (p.x)

Aesthetic response is "to be analyzed in terms of a dialectic relationship between text, reader, and their interaction. It is called aesthetic response because although it is brought about by the text, it brings into play the imaginative and perceptive faculties of the reader, in order to make him adjust and even differentiate his own focus." (Ibid.) "A theory of response has its roots in the text; a theory of reception arises from a history of readers' judgments." (Ibid.)

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IVANOVA, J., 1992:

This is a philosophical review of the relationships between the object-property-process triad, with an emphasis on the denotative and organizational meaning of the term 'property'.

- J -

JACKSON, MILES M., 1984:

An interdisciplinary approach to information science is characterized by convergence of information science, communication, instructional technology and library science. All these disciplines are concerned basically with information handling and transfer.

The knowledge base for this new discipline is drawn from logic, mathematics, general systems theory, management science, philosophy, engineering, psychology, linguistics, library science, operations research, and computer science. The four main ingredients of information transfer are sender, message, medium and the receiver.

Communication science is the study of processes by which information is moved from one point to another through a common system of symbols, signs and behavior.

Library science is a study of the principles related to the generation, collection, organization and classification of information for storage and retrieval. Major responsibility is for dissemination of all forms of information to appropriate audiences.

Information science is a study of the characteristics of information and how it is transformed for consumption.

Instructional technology is the study and practical application of communication technology to meet educational needs in a society.

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The common basic characteristics are: (1) information and communication need of users, (2) information and communication technologies, and (3) policy studies.

JACKSON, SIDNEY L., 1971:

This is a criticism of Gore's notion of skepticism. "To raise skepticism from a sound tool to a philosophy is to say that man's pursuit of truth is a waste of time. Defending all [material] in the name of abstract 'freedom' has been attractive to all of us [but] the abstract 'right' to have in a small library collection a sample of every known printed poison will come increasingly into conflict with what seems like common sense." (p.16)

JARVELIN, KALERVO and PERTTI VAKKARI, 1991:

A content analysis of research in library and information science indicates an even distribution between services, storage and retrieval (25% to 30% each). Among methodologies used, the empirical strategies were used approximately half of the times, with survey methods followed. "The most notable change from 1965 to 1985 was the loss of interest in methodology and the analysis of LIS and the change of interest in information storage and retrieval from classification and indexing (from 22 to 6%) to retrieval (from 4 to 13%)." (p.109)

- K -

KAEGBIN, PAUL, 1976:

The library provides literature, information about it and information about subjects, facts and data. The kinds of information available in libraries are (a) active (content of the library itself, its documents), (b) passive (informational aides, e.g., bibliographies) and (c) intermediary (transmission of the output of special information centers) The library is "responsible for collecting literature; the job of evaluating and providing information is taken over by the documentation centre, and everything connected with using the literature is the concern of the library." (p. 9)

The changing information environment requires close cooperation among libraries and documentation centers, both becoming parts of larger networks, utilizing new technologies; "in the age of specialization, method is more important than information." (p.11)

"There is no substitute for the systematic collection of literature and for professional processing by means of catalogues, bibliographies, reviews, and subject documentation card file. These should, however, be supplemented by new media of information retrieval which can, with the help of data banks, quickly provide answers to complex problems." (p. 14)

KAPLAN, ABRAHAM, 1964:

The function of philosophy is "to hold the mirror up to nature, and particularly . . . to human nature." (p. 295) Human knowledge is known to very few human beings, hence the main functions of the library are as: (1) a repository service (society's memory), (2) a means of education (improving patrons status in society by sharing with them experiences of others) and (3) a re-search (not extending knowledge but making available the knowledge already existing).

Library focuses on a flow of ideas, shifting throughout history from being 'operating gas station' to 'a traffic transportation engineer, stressing fundamental issue of information flow.

Intellectual foundations of library education are based on the concept of librarianship as metascience: addressing not the nature of things but the ideas about them, the nature of reality, not reality itself, with central concepts of structure, order, and form (as contrasted with narrow subject specialization focusing on substance and content).

Librarians should avoid the tendencies described by the law of the instrument: "give a small boy a hammer and it will turn out that everything he encounters needs pounding."(p. 303) Machine, like a computer, dictates its own ends, we adapt solutions in terms of its capabilities.

There are some similarities between philosophy and librarianship, both disciplines (a) address the whole knowledge and culture; (b) both unable to address the substance and content of knowledge concentrate on its form, structure, order and various interrelationships, and (c) in both the problems come from outside of the disciplines, each serving as middlemen for other disciplines.

KARETZKY, STEPHEN, 1982:

This is a scientific research on the sociological aspects of adult reading. "It describes and analyzes the findings, methodologies, and philosophies of the researchers and the form and dynamics of their research movement . . . to ascertain the types of adults who read books and/or magazines, their motivation, their reading interests and habits, the sources and contents of their reading material, and the effects of reading upon individuals and society." (p.xv)

The study reveals the impact of reading on the nature of library professional, social, political and methodological problems faced by librarians.

"Most of the reading research had relatively well developed social philosophies and strong beliefs on some of the fundamental questions in librarianship (indeed, they considered these two things inseparable)." (p.355)

KASER, DAVID, 1971:

Similarly to Ptolemy's geocentric view of the universe that focuses on egocentricity, Kaser sees librarianship as a center of the whole cosmic order. By comparing librarianship to 'bibliothecal priesthood', the author stresses the importance of the social mission to preserve, organize and disseminate 'the human message', to seek answers to old problems and to be alert to new social issues.

"Unless we do our work well as librarians we could bring about the destruction of our society as the Mayan priesthood may have done in Yucatan." (p. 13)

---- 1975:

Librarians are "generalists without specialization but with sufficient general understanding to be able to coordinate the work of specialists in the interests of complex multi-dimenional causes." (p.29) Librarianship "attempts to develop general knowledge without specialization among its practitioners." (Ibid.)

The value of library book collection to society is twofold: (a) financial, measured in dollars, and (b) humanistic or mission-oriented research. Humanistic endeavor is based on communication between people or disciplines, in each case the participants are changed by the conversation. The major function of librarianship is the preservation, organization and dissemination of the cultural records. This function is indispensable in every human activity.

KEMP, D.A., 1976:

This book identifies the properties of knowledge in the context of communication, its absorption and interpretation. Knowledge is defined as what a person believes and states as his belief; it dependents on the compatibility of that statement with the statements made previously that are believed to be true. Knowledge exists not only in the minds of people but also in books and other records of knowledge.

The scope of knowledge is considered in terms of its relations to personal and social believes, its organization and systems.

Without understanding the concept of knowledge "the librarian or information scientist is like a surgeon practised in operational techniques and equipment, who knows nothing of the structure of the bodies on which he operates." (p.11)

KENT, ALLEN, 1977:

"No one has penetrated the real justification for an information system - the transfer of information to the user." (p.16) Relevance of the information system to the user may be appropriate but not necessarily useful or significant. A better understanding of the information-transfer process is needed in order to develop a 'transfer coefficient' that would objectively relate the output of the system to the user's perception of what is relevant.

KERR, WILLIS, 1920:

"A working philosophy for librarians takes account of librarians and books and men. It considers their ideals and their shortcomings. It reckons their goodness, their wisdom, and their power." (p.59)

William James pragmatism advocates workable principles that would produce results based on moral and logical approach. It implies faith in ourselves, our work and in people. We "must recognize that the moral and intellectual enrichment of the mind is a tremendously important human process, and that therefore the supreme opportunity of libraries in education." (p.61)

---- 1947:

"In 1911 I was calling on psychology to help in getting books used; by 1921 I was urging librarians to have a working faith, in 1934 I was pleading that history be kept young by the writer, reader, collector, and curator of the things that made history; and in 1943 I was frantically asking why professors so seldom look in the card catalog." (p.187) The author asks "whether there may be a philosophy of the use of books . . . a book-philosophy which results in scholarship." (Ibid.)

"Now my present philosophy of book-use is that we have been too long conscious of the chains by which we used to fasten books to the book-racks." (p.188) New printing processes made the book free; it should be fully accessible to the patrons. Yet we limit their use to text-books, or to required readings of few books. Use of paperback editions, micro-card books, open stacks and comfortable physical environment will make that access to books much easier.

KHURSHID, A., 1976

Functions and practices of librarians are not governed by any accepted principle or philosophy. Intellectual foundations of librarianship are expressed by various notion of what librarian and library ought to be: (1) Jean-Baptise Cotton Des Houssayes required vast and precise knowledge of arts and sciences, (2) Cassiodorus focused on interpretation of knowledge, sound learning, reading and copying of books, (3) Naude considered librarian as a specialist in the sources of information and scholarship, (4) John Dury viewed him as a trader, treasurer and dispenser of knowledge, (5) F.A. Ebert concentrated on librarians knowledge of history, bibliography and basic disciplines, rapid handwriting, knowledge of carpentry and ability to repair books.

Chicago's Graduate Library School introduced research with some probing into philosophical base on librarianship. Its critic, C.S. Thompson objected to scientific and research orientation as weakening traditional focus on reading. Danton argued that science deals with acquisition of data, their description and explanation; philosophy is interested in its aims, functions, purposes and meaning.

Lack of philosophy affected sociological foundation of librarianship. Although all writers agreed on social function of the library there was no agreement about its specific duties and functions; some advocated passive role (serving readers when they asked for it), others wanted an aggressive approach.

First to attempt a philosophy of librarianship was Ranganathan (1931) in his five library laws which revealed only two conceptual changes by generalization of the concepts of (1) book (documentation), and (2) growth (as a steady increase in size, but not recognizing the function of 'conserving')

Shera supported the laws as expressing his own notion of library service in terms of maximizing the utility of graphic records for the benefit of the society.

Danton criticized the five laws as not providing open-ended enquiry into the validity of functions and activities; he claimed that library philosophy should start with the philosophy of a society and its role in democracy.

Khurshid included an extensive list of contemporary writers on subjects related to the philosophy of librarianship.

KILGOUR, FREDERICK G., 1966:

" A system is an on-going process that produces some wanted operation and is thought of as a whole rather than as an assemblage of pieces and procedures." (p.167) "Modern systems, in addition of being all-encompassing, ongoing processes, are information based." (Ibid.) "The important aspect of the information base is not the information in process in the system, however, but rather information about what is in process. It is the use of this information, about the form of information in process, to control the system, that distinguishes the modern system from a collection of procedures." (Ibid.)

The library operations did not keep pace with the changing status of information in the society and with the needs of library individual patrons. "To put it in another way, during the last half century, library science - relative to library use - has become increasingly a priori in principle and increasingly self-existent in practice." (p. 169).

New library systems will be information-based, controlled by information processing computers, aiming at efficient retrieval of information for individual patrons.

KING, DONALD W., 1988:

Different approaches to the information relevance are created by different perspectives on issues such as user or system views.

"Information needs are the combination of information messages needed and the purposes for which they are sought; information requirements are users desires for attributes of information, such as accuracy, dosage (i.e. precision) currency etc., and attributes of information services such as quality, speed of delivery, accessibility, etc." (p.21)

Information professions "involve generic information function, such as transforming information," (Ibid.) describing and synthesizing it, providing logical access to it, evaluating and analyzing its content. Information science, like chaos theory, focuses on patterns in disorder.

KING, D.N., and others, 1991:

"Philosophy is not only inescapable, but necessary." (p.30) "Every decision and every action is an expression of beliefs and values and ideals, a concrete explication of philosophy applied to practical affairs. Philosophy is the fountainhead from which professional practice flow. In fact, profession means to openly declare a belief. Professional practice is a philosophy enacted." (Ibid.)

Natural rights philosophy shaped library democratic ideals and values reflected in the following principles: (1) The library mission is educational and informational: to inform and enlighten. (2) Assuming human capacity of reason and judgment libraries guard against prejudice in selection policies, by providing full access to all viewpoints. (3) They preserve intellectual freedom. (4) They provide services unrestricted by the patrons origin, age. background, views or ability to pay for it. (5) Libraries protect the confidentiality of their patrons.

The authors note however, that "referring to the fundamental philosophical foundations upon which libraries and their services are based may not always provide clear answers, and different libraries may come to different conclusions concerning interpretation of principles and their application to service, but conscious attention to principles offers a source of continuing guidance for professional practice." (p.40)

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KINSTON, WARREN, 1986:

The purpose is a fundamental concept in organized activities and mental functioning. It is not satisfactorily defined, and is often used as synonym for end, goal, object, intention, aim, policy, strategy, direction plan, mandate, objective, results and task.

The author identifies five basic types of purpose: (1) a banner goal (philosophical fundamental and symbolic value), (2) mission (general aims expressing a value consensus), (3) political aim (policy priority), (4) strategic objectives (action-defining purposes) and (5) tactical objectives (task objectives).

Values refer to interests, beliefs, ideals and act as basic criteria for choice. Action involves direct alteration of the social or physical world.

"Purpose is expressed in the act of deciding. Decision may be defined as the application of value to action, and so the system of purposes is also a basic schema for decision-making." (p.149)

KNAPP, PATRICIA, B., 1964:

Most colleges do not provide learning environment. Colleges are neither intellectually exciting nor vocationally meaningful, negating integrated learning environment.

Library potential in integrated learning environment lies in its relationship to the curriculum and the faculty on two levels: (1) at the political-organizational level it should act as a mediator fostering communication between the departments, and (2) as a total system, organizing material for all disciplines, the library can provide an epistemological focus for integration in a curriculum. This includes encouragement of independent studies developing independence of mind as evidenced by ability to arrive at one's own conclusion and by willingness to differ with the teacher.

The Monteith Library project at Wayne University is based on four principles: (1) a bibliographical tool developed by and for librarians stresses subject and form of publications rather than discipline. (2) Starting place in the bibliographical search depends not only on where one wants to go, but where one is (i.e., the amount of information the user brings to the search). This explains why students miss important information and why teachers restrict the free use of the library. (3) Organization of literature follows a standard pattern of original publications, accessed through indexes, abstracts, reviews, or encyclopedias. (4) Similarities and differences in the bibliographic organization of academic disciplines reflect similarities and differences in the history, philosophy, goals, style of work and economic support available to the disciplines themselves.

All these principles clarify the complex interplay between teachers (masters in the field), librarians (organizer of the bibliographical apparatus and the literature) and students (apprentices to the teacher, and consumers to the library).

---- 1973:

Librarianship is practiced in the context of the complex organization, leading to an inevitable tension between the authority inherent in the structure and procedures (i.e., the 'rationality') and the authority of specialized knowledge (i.e., 'expertise') inherent in the professional role.

The author discusses three models of organization:

(a) The Rational Model is symbolized by the organizational chart based on a hierarchical pattern of authority and responsibility. The assumption is that people in higher positions in the organizational hierarchy are knowledgeable about the goals of the organization and means to achieve them.

In practice librarianship is a craft or an art, focusing on concrete and practical aspects of traditional librarianship. Shera's social epistemology focuses on production, flow, integration and consumption of all forms of communication through an entire social pattern; from it a new body of knowledge will emerge which will provide a synthesis for the interaction between knowledge and social activity. This discipline has yet to be developed, meanwhile librarianship's 'authority of knowledge' carries little weight in the rational bureaucracy.

In professional view the goal of service to society overrides all administrative goals, with a profession itself determining specific goals. In librarianship the goals are diffused because we cannot define clients' needs.

(b) The Natural System Model argues that the rational model is inadequate for study of the nature of organization. Human relations school stresses the importance of peer group relations and satisfaction. Professional status in library cuts across grouping according to common tasks.

In a library, organizational context is complicated by involving all types of organizations: a school librarian is closer to a teacher than to students, and an academic librarian had difficulty establishing professional-client relations with the faculty.

(c) Synthesis and the Structuralist Model point to the weaknesses of both above schools: Rational model assumes an administrative viewpoint, underestimating irrational elements in management, the Natural System model underestimates real impact of formal organizational structure, procedures and the rational motivation of workers. The model focuses on harmony. It recognizes the organizational dilemma of inevitable strains between organizational and personal needs, rationality and non-rationality, discipline and autonomy, formal and informal relations between management and workers. Functional autonomy allows a librarian to recognize his functional dependence upon others for achieving his objectives.

In general librarian view of the organization is dominated by the rational-bureaucratic model, modified by 'democratic' emotional aspects. Individual view of the profession is dominated by the classic model of the profession, searching for professional organizations for enforcement of standards and code of professional ethics.

Organization theory is a component of social epistemology. Increased importance of organizational context in which knowledge is acquired, communicated and used requires that more attention in library education be given to courses such as 'library in society', library and information system and bibliographic organization.

KOBLITZ, J., 1969;

The main "distinctions between the librarianship and information/documentation at the stage of information production reside in the fact that libraries handle the primary information (sources of information) in a documentographic way, and information/documentation centers in a factographic way. The secondary information obtained in this way may be combined, at the second stage of handling into information media. These information media may in turn be subjected to documentographic handling (technical synthesis)." (p. 134)

Documentographic methods expose the content through location, annotation, classification, and indexing. Factographic method focuses on important points in the document contents. Librarians compile bibliographies, reference locations and indexes, the documentalists compile review abstracts and reports in specific fields, focusing on the substance of a particular issue or problem.

The term 'information' is a polysemantic, specifying activity (process of informing), or an object of that activity (a message). (a) As a process, information involves production, accumulation and retrieval. (b) As an activity it means obtaining, processing, storing and distributing information. (c) As a message information is a unity of a physical carrier and a meaning (the thoughts do not represent information until connected with physical carriers).

Specialized information means either (a) the theoretical cognition of facts or circumstances, or (b) experience in a philosophical sense, as "theoretically incondite empirical cognition, and a link between theoretical knowledge and practice which are used to produce a purposeful information message transferred to another individual." (p.128)

Information and documentation provide research, teaching and practice with precise, systematic, comprehensive and purposeful information on a desired topic.

KOCHEN, MANFRED, 1967:

The idea of encyclopedic information system was expressed in the Weinberg report in which information process was considered "as being part and parcel of the process of discovery and innovation; it asserts that the essence of the information problem is to maintain knowledge as a viable unity and that the basic information processes are those of sifting, reviewing, and synthesizing information." (p.10)

In that process, according to Weinberg, "the steps are linked in the sense that the later steps depend on the earlier, the entire information process is chainlike, we shall call it the Information Transfer Chain." (p. 40)

---- 1969:

The author anticipated an emergence of new discipline, developed by both scientists and humanists, called epistemodynamics, which may become the bases of information science. It studies processes of knowledge growth, and "is concerned with lawful regularities governing the acquisition of information and its transformation into knowledge, the assimilation of knowledge into understanding, the fusion of understanding into wisdom." (p.195)

Following Cassidy, the author makes a distinction between (a) information as essentially raw data helping to remove uncertainty, (b) knowledge as an interpreted data, resulting from analytic processes, (c) an understanding resulting from synthetic processes, connecting different events, and (d) wisdom that combines knowledge, understanding and experience.

Cassidy states that "fragmentation of knowledge and experience opposes wisdom; excessive speculation, while it may give deep understanding, does not confer wisdom." (p.192)

---- 1974:

Information consists of (a) recorded data (well-formed statements), useful for computer and social scientists; (b) part of communication as a property of coded messages, used by communication engineers; (c) knowledge defined as mental state in answering the question, of interest to philosophers; (d) understanding mental conditions needed to answer the question, generated by theorists; and (e) wisdom a mental state based on knowledge and understanding and used by decision-makers.

Information becomes knowledge, after it is retrieved by the questioner in response to the question asked which set a framework for the specific retrieval. The computer by itself does not create knowledge. It records, reads, stores, transfers, transforms, controls and refers to it; however, together with the user's interpretation it can generate knowledge. "If knowledge means question-answering, understanding is question-asking." (p. 55)

Generic concept of a book is an important source of input, it includes print, non-print and computer programs. The main function of a library is "to maximize the greatest potentially attainable, effective, and efficient social utilization of documented knowledge, understanding and wisdom. This shifts the burden on bibliographic control from keeping track of physical objects to intelligence . . . devising schemes for an intellectual organization of the information resources in the library." (p. 65)

---- 1974a:

The author's analysis of the structure and use of library catalogs provides an important clue to the behavior of the information seeking patrons. Advantages and disadvantages of search strategies based on the search by the author, title or the subject of the book are related to the patron's knowledge of the subject searched as well as to his or her understanding of library organization of recorded knowledge.

---- 1983:

"Librarianship, library science, documentation, bibliography, and information science in the narrow sense . . . have in common a focus on the written records and the physical documents." (p.374) "Librarians are concerned with organizing collections of such documents and facilitating their use." (Ibid.) This involves selection, bibliographic control and reference.

"Information science, in the broader sense . . . is, in contrast, concerned with information, knowledge, and wisdom. Here information is used in its technical scientific sense to denote what is transmitted over a communication channel to remove a receiver's uncertainty about an ensemble. It is both a flow and a patter that flows over a channel."(Ibid.) "To be informed is to experience a change in some cognitive structure; to inform is to effect such an experience." (Ibid.).

Information with meaning become knowledge, knowledge by identifying new relations becomes understanding and wisdom interrelates knowledge and understanding in the world views.

KOENIG, MICHAEL E.D., 1982:

"The interplay of libraries, information processing, and computer technology . . . is beginning to affect us with almost dizzying speed. The threshold effect, and the simultaneous change in the rate of growth of computer technology, have combined . . . to make it difficult for us to respond . . . to our changing information world. We still talk about an information explosion, when in fact we are in the midst of an information controllability explosion. This is . . . a dramatic reversal to all previous bibliographic history." (p.2054)

Traditional technology for information growth grew exponentially at a slow rate. The information explosion doubled every 15 years. The large-scale integration technologies for controlling and manipulating information, grow at the exponential rate greater that the information explosion, doubling every two years.

---- 1987:

The information controllability explosion adds to the increased computational capability (stage I), the storage capability (stage II) and telecommunication using fiber optic cable capabilities (stage III). In stage II "we have created vast systems of meta information . . . [telling us] about the existence of information or documents that might contain the needed information, but we have only began to develop systems that are truly information retrieval systems rather than mere document directory retrieval system." (p.52)

KOLITSCH, MYRA, 1945:

Philosophy of any field requires; (a) identification, analyzes and an appraisal of basic assumptions, and (b) relating them to a larger whole. Librarianship is a social activity, an establishment responsible for maintaining and connecting recorded sources of knowledge with individual patrons.

Philosophy of librarianship must be (1) satisfactory to librarians; (2) "consistent with the social philosophy of the nation or group of people within which it is but one of many interests, . . . (3) it must be able to exist and have its ends and ideals pursued in a world of many conflicting social philosophies, ends, and ideals; (4) it must promote rather than retard or obstruct the fullest development of the highest potentialities of the individual, society, and the library itself; (5) it must be forward looking, and . . . it must . . . submit to self-criticism, both in its theoretical formulations and in its practical applications, and . . . (6) its ideals must be capable of progressive realization and application." (p.25)

"The social philosophies of democracy, communism, and national socialism require quite different philosophies of librarianship in order that the library may exist and function in accord with the society of which it is a part." (p.26)

Philosophy of librarianship in communism considers people and societies in economic terms, in national socialism as emotional, irrational creatures, in democracy as rational individuals.

In each case library collection promote nationally correct reactions, discarding "those parts of its system that prevent development, progress, change, and the realization of its ideals." (p.31)

KOLODZIEJSKA, JADWIGA, 1984:

The library is a social institution. Its technology depends on the structure that is characteristic of particular society in a definite historical period. Libraries reflect changes occurring in social structure. Their social character enables one to treat them as institutions of culture that mediate between the author and the reader. "Changes in social structure have an external character for the library, on which it has no influence." (p.200) "However, the library exerts influences in the sphere of culture, which includes certain systems of symbols connected with religion, art, learning, and literature. Here, the library performs a communicational role and contributes to cultural integration." (Ibid.)

KOOP, JAMES J. 1988:

In reflecting on the controversy about the place of automation in libraries, the author compares the opposite views with the notion of utopia, which till now meant "a non-existent good place . . . any idealized place, state, or situation of perfection." (p.936)

Kopp thinks that a convergence of technology and service is such utopia, a reaction against the present state of affairs, aiming at change. Without prejudging the results of the proposed changes, the very efforts to introduce them have a significant impact on library development in the vision offered by these utopians.

KRIEG, CYNTHIA J. 1970:

Since no philosophy of librarianship was fully formulated at the time of Putnam appointment as Librarian of Congress, his "thought were based not upon those of librarians but the important philosophers and intellectuals movements of the day . . . he read widely and formulated an eclectic philosophy . . . his observations on open access to shelves, cataloging and classification, women's role in the library, library education, librarianship as a profession, the value of books, service to children, furtherance of scholarship, the importance of cooperation and the role of the library in a democratic society are still mentioned in contemporary textbooks on library administration and philosophy." (Introductory note by Joseph Eisner)

Krieg identifies the following concepts as relevant to Putnam's philosophy of librarianship: (a) the library educational role in the community, (b) importance of books, (c) Puritan strict moral code guiding libraries to bring order into chaos, and (d) provision of reading material on all issues,

Philosophers that influenced Putnam's thinking included: (a) Jefferson's concept of democracy dividing library patrons into general readers, who should be given opportunity for basic education, and scholars, treated as unique individuals; (b) John Locke's believes in education promoting principles of virtue and wisdom, (c) Emanuel Kant's individual responsibility for self-improvement, (d) Francis Bacon's criticism of 'mean' books, and (e) Thomas Carlyle's notion of preservation of culture in books.

KRUSHANOV, ALEXANDER A., 1993:

Research in the field of knowledge organization is based on researchers understanding of a general structure and dynamics of the world. It is reflected in the development of the classification schema, which are insufficient in the changing structure of contemporary sciences. The relationships between the inorganic, animate and social systems are more similar that previously assumed, making possible a better systematization of knowledge. This can be accomplished by distinguishing between two kinds of knowledge: "'universal', which does not fix the concrete nature of reflected objects ('number 235', 'system', 'quality'), and the 'specific' type which reflects the concrete nature of objects ('culture' - social phenomenon, 'gene' - biological object, 'atom' - physical object, etc.)." (p.192)

KRZYS RICHARD, and GASTON LITTON, 1983:

Authors discuss four key evolutionary terms: (1) metalibrarianship ('the philosophy and theory underlying the practice of librarianship throughout the world'), (2) world study in librarianship (the process of comparative study itself), (3) global librarianship (library development 'characterized by decision-making for the purpose of satisfying humanity's information needs rather than purely regional or national needs'), and (4) extraterrestrial librarianship (a logical outgrowth of successful global librarianship). (pp.3-4, 201,203)

Characteristics defining librarianship include: the nature, purpose, origin, categories, the interacting variables, and development. Although they search for the theoretical unifying principles in the world librarianship, the authors agree that "as long as various cultures exist throughout the world, and as long as legislation and mores differ from country to country, librarianship will differ from region to region and country to country." (p. 180)

On the subject of philosophy of librarianship, the authors pointed out to its origin in antiquity and Gabriel Naude's first philosophical work, followed by Cardinal Mazarin treatises, an intellectual revolution in USA in 1915, and radically new approach of Lenin in 1917 (defining the special role of the socialistic library).

Other contributions listed: C.C. Williamson's Report, establishment of Graduate Library School in Chicago University and works of Pierce Butler. All these writers addressed the nature of librarianship.

The 'Four Laws of World Librarianship are: 1.The Law of Appropriateness: librarianship must be planned in accordance with the realities of a given country historical background, economic conditions, political situation, and cultural context.

2. The Law of Interdependence: the quality of any aspect of librarianship will be reflected in all other aspects. 3. The law of Partial Convergence: international librarianship requires standardization) and 4. The Law of Total Convergence: through standardization librarianship will converge to form global librarianship. (pp.196-197).

KUBATOVA, VERA, 1974:

Informatics is a scientific discipline reflecting the scientific and technical levels of its society. As a social phenomenon it is a complex system of social information processes.

KUMAR, GIRJA and KRISHAN KUMAR, 1987:

Ranganathan's intellectual life can be divided into three periods: (1) library movement, (2) library management and (3) classification and subject organization. His work is based on Indian culture, history and philosophical tradition. (e.g., use of mnemonics in his models is rooted in Indian mysticism).

In his methodology, as expressed in Five Laws, Ranganathan adopted a systems approach expressed by normative principles that form the base of his conceptual framework.

The Prolegomena developed analytico-synthetic and postulational approach to library classification, yet logically it emerged from the normative principles. As a mathematician Ranganathan was not "fully conversant with scientific methodology, linguistics, cognition and sociology of knowledge

. . . his conceptual framework is therefore implicit in his thoughts. It does not come out explicitly in his writings, so it has to be deduced." (p. 25)

He postulated fundamental categories of Personality, Matter, Energy, Space and Time; his facet analysis influenced faceted classification schedules, subject indexing, vocabulary control terms and computer based bibliographic searching and database systems.

"By ideally combining theory with practice, he seemed to recognize the importance of the law of contradiction in things, or the law of the unity of opposites as the basic principle of dialectics," although by recognizing knowledge as a given, constant process, "he gave the impression of contradicting himself in his writings." (p. 26)

At the time, the book not the reader was the focus of librarianship and information science. Ranganathan perpetuated the same myth in his Five Laws, with the user considered as a passive agent.

Basic for Ranganathan was the concept of subject, defined as "an organized, systematized body of ideas (concepts) easily comprehensible by a normal intellect." (p.30)

Followers of Ranganathan philosophy can be divided into: (1) those who accepted him as a teacher, 'guru', manifested emotive involvement, uncritical loyalty and ideological acceptance of his teaching, (2) Ideologues whose interpretation of Ranganathan's theory was based strictly on his writings, (3) Iconoclasts, who re-interpreted Ranganathan in modern terms, maintaining intellectual independence, and (4) Innovators neither personally loyal nor ideologs, considered Ranganathan's main contribution to the discipline's methodology.

"The reign of universal classification of the order of the Dewey Decimal Classification, Universal Decimal Classification, Colon Classification and Bibliographic Classification ended long time ago. They are relevant only to public and school library systems." (p.31) "Work at the micro rather than the macro level may be the order of the day for research work in future." (Ibid.)

KUNZE, H., 1973

Libraries are old but the librarian's image as an independent professional is young. In the past librarians were scholars without special bibliothecal training, acting as knowledgeable keepers, collectors and guardians. Their education was encyclopedic.

New concept of librarianship emerged with the changing social environment; the most important changes were: (1) rise of a special library, and (2) establishment of library networks.

Major changes began in 18th century with increased literary production, rise of periodicals, secularization and acquisition of older collections, state legislation requiring libraries to collect specific materials, expansion in art, technology and scientific organizations. The library was expected not only to collect but also to serve its collection. The initial focus was on library organization, administration and emergence of bibliothecal science as library administration or economy.

The education of librarians should focus on acquiring fundamentals and technical know-how. Foundations of librarianship courses should include library purpose, methods, principles of book selection, processing technology, administration, basic information services and sociology of librarianship.

KYLE, BARBARA R.F., 1963:

"There was a time when physicians called surgeons 'butchers and barbers', but that is all over and both now serve the cause of Medicine without recrimination or insult flying across the bed of the patient. Ought we not follow this example and jointly serve the cause of knowledge and its communication, without useless argument about whether librarianship is subsumed under documentation or vice versa? Our profession, like architecture, should bridge the arts and sciences, not form a moat between them." (p. 81) "Education based on the three C's - communication, computation and classification . . . would [demonstrate] the indivisibility of knowledge and the need for interdisciplinary attack on the intellectual problems in the twentieth century. One of these interdisciplinary problems central to our interest [is] how far and in what ways can computers serve the cause of information storage and retrieval?" (Ibid.)

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LADENDORF. JANICE. 1973.

In evaluating library services a distinction must be made between efficiency and effectiveness. Efficiency can be evaluated by system analysis which however, overlooks an interplay between human creativity and organizational changes, thus preventing the measure of the total library service. Effectiveness is to maximize library services within the limits of available resources.

Libraries, unlike for-profit organizations produce service for users, not products. Efficiency "is putting together an optimal mix of resources. The effectiveness . . . is deciding on the right goals." (p.274)

Measurements of effectiveness are difficult in librarianship, partly because of the issue of motivation. "People may feel a need for information, but this need cannot be measured until it emerges as a demand for service." (p.276)

LANCASTER, F.W. 1977:

The theory of evaluation is based on a need to have clear objectives and measurement tools. Some issues relating to the evaluation of library operations include: (a) library functions and objectives to bring users and documents together, without having controls over users' behavior create difficulties in determining library benefits. (b) Social, spiritual and economic benefits can be related to ultimate library contributions to the society, but are inappropriate for measuring immediate library performance. (c) Ranganathan laws identify aspects of library services to be measured: First law (books are for use) implies library concept as an interface between users and bibliographic resources; second law (every reader his book) implies the notion of accessibility of library service on demand; third law (every book its reader) implies exposure by making bibliographic resources known to users; fourth law (save the time of the reader) refers to relating internal efficiency of the library, i.e., making bibliographic resources most convenient by maximizing the users need satisfaction and minimizing the time loss to the user. (d) Mooers' Law states that the difficulty in information retrieval system discourages its use, and affects the physical accessibility of library services and collections. The accessibility may be: (1) societal (need perceived by society), (2) institutional (determined by library support), (3) physical (ready access), (4) psychological (recognized needs by users), or (5) intellectual (intellectual capability of a patron). (e) Zipf's distribution law states that when a large collection of text is analyzed, a comparatively small number of words occur very frequently and accounts for a large proportion of all words occurrences in the text. This, similar to Bradford's distribution law, illustrates the law of diminishing return.

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---- 1978:

The library of the near future will become (a) a center for the access to data bases, providing expert assistance in the use of machine-readable material, and (b) a printout center, collecting, processing and indexing material of local and special interest.

Librarians will be de-institutionalized, and the availability of global information networks, will change a traditional library into 'library without walls.'

---- 1982a:

"The evolution of electronic publishing is essentially an analog of existing printed materials . . . [it will] ensure versatile, efficient utilization of information." (p.3) reduce cost of retrieval; and will have significant impact on librarianship.

Author traces the transition from paper to electronic form through (a) the use of paper only (indexing, abstracting services, a static analog), (b) the dual use (newspapers, popular magazines, new narrative presentation; machine readable form and print on paper, (c) new electronic mode (reference books), (d) conversion from papers to electronic publishing (reports, patents), standards.

First application of computers in libraries was in the production of cataloging cards and microfiche, expanded to the online cataloging, changing library ways of doing things by changing actual processes.

With the disappearance of a traditional library by 2000, few institutions will act as passive archives of printed material; the emphasis will change from physical library to librarian as information specialist, free from a particular building and collection of artifacts.

---- 1982b:

The rate of the present technological acceleration is accompanied in librarianship by failures to visualize all the effects of technological development, including its impact on publishing industry.

Future education most probably be much less book, or institution, centered; with popularity of an open university, a quarter of existing liberal colleges could disappear.

Written word will cease to be a primary means of storing and communicating information, there will be no compelling reason to be able to read, write or do arithmetic; there will be a shift from the learning as presently known to the mastery of technique (learning how to learn). Literacy will primary mean ability to locate, retrieve, select, organize, evaluate and communicate information.

In libraries the most important will be a more efficient access to data online beyond its own holdings.

Electronic networks can democratize human communication, but it can also promote the establishment of 'information elites' (e.g., invisible college), and be affected by economic, technological and cultural barriers. Political and social factors will greatly influence the demand for information and may retard the rate of change, while technological and commercial factors may tend to accelerate it.

"Library in a conventional sense - i.e., a physical facility housing physical artifacts - is beginning to outlive its usefulness . . . [requiring change in emphasis) away from the library as a building housing artifacts and toward the technical expertise of the information specialist who may function independently of any particular facility." (pp.23-24)

---- 1983:

Concept of librarianship is institutionalized. i.e., its name is associated with a library rather than its activities. This is so because libraries existed before librarians. that is, collection and custody of materials existed before the need to service them. Today the focus is still on physical facility (building) rather than on technical expertise of skilled practitioners. Distinction should be made between expertise for diagnosis information needs and prescription, location, delivery, and arrangement of material on shelves.

Technology affected librarianship in two ways: (1) initially computers were applied to the housekeeping or inventory control activities. (2) they fundamentally changed publishing, distribution of information and access to remote sources of information.

This started the process of a library without walls, a gradual disembodiment of the library. Collections of all libraries become electronically accessible to everybody for a fee. Facilities to preserve material will continue but more as museum activities, providing little if any service.

Future of librarians as skill information consultant depends on: (1) the increased demand for information, (2) need for professional help in solving information problems, and (3) library profession ability to adapt to the rapidly changing environment.

The author plea is for a shift in education from the library as an institution toward the skilled information professional with a focus on the librarian and not the library.

As a facilitator of communication, the librarian must study all aspect of a communication cycle from the creation of recorded knowledge, through its distribution, processing, and assimilation to application.

The substance of the librarian's curriculum must be human communication in general, with formal communication receiving most of the emphasis. Our preoccupation with management skills fails to distinguish between the librarian and library administrator, and between the knowledge of computers and their use: knowing how the car work does not necessarily improve one's driving skills.

---- 1985:

The myth that a book is an indispensable element in our society is a nonsense. The evolution is progressing fast: personal computers, electronic mail, videotext techniques, electronic publishing, online full text, new publications for which no print-on-paper exists - all illustrate the dimensions of the change.

Impact on the library is seen in literature searching, document delivery, online union catalogs, ordering of documents, and in direct transmission of text from an electronic store to the terminal of the user.

New communication form in the future will include the use of sound, moving pictures and electronic analog modeling, leading to new art and imaginative literature, such as electronic painting and poetry.

"What I am suggesting, then, is that the printed book will be replaced by something quite different from anything we have yet seen, and this will occur because the medium replacing it will be widely perceived to be better." (p. 555)

---- 1991:

This collection of papers raises a number of ethical issues emerging from the changing technology, including a reevaluation of the existing library ethical code (Clifford Christian). The participants called for the inclusion of courses on professional ethics in library education, stressing their complexity expanded by personal biases (Herbert White). Other ethic-related issues included: quality of service (Charles Bunge), relations with vendors (Donna Goehner), personnel management (Kathleen Heim), commitment to intellectual freedom (Gerald Shield) and conflict resolution of ethical crises (Michael Wessell)

LANCASTER F. W., and C.CLEVERDON, 1977:

Earlier literature focused mainly on the theory and philosophy of evaluation, with little actual evaluation. Recently, more objective and systematic evaluation procedures were developed. One of them was that of evaluating user satisfaction (effectiveness), but limited to the user's demands only (expressed needs), neglecting the latent needs (unexpressed).

Evaluation can be: (a) a quantitative macro-evaluation, answering the question, 'how well is the system performing?', and (b) analytical and diagnostic micro-evaluation, concerned with reasons behind given results and how the performance could be improved.

Fairthorne's proposed that librarians deal in documents not information by affecting patron's behavior in using the documents: librarians merely notify the patron about the existence of the document. Fairthorne pioneered bibliometrics, moving away from subjective user studies. The bibliometric laws of scatter and obsolescence differ from the laws in natural sciences, by referring to the user's behavior in the past, influenced by the way information system is structured: most cited journals are most available and hence even more often cited.

LANCASTER, F.W. and LINDA S. SMITH, 1978:

The paper discusses the major channels by which the research results are disseminated. "The original purpose of journals was not to publish new scientific papers so much as to monitor and digest the learned publications and letters that were too much for an individual to cope with in daily reading." (p.372)

The initial goals of a special library of the last century were defined by: (1) use of recorded information as tools, (2) scope of resources determined by the needs of parent organization, and (3) reference services considered as a principal function of a library. [The special Libraries motto is: 'Putting knowledge to work'].

Informal communication is old but only recently analyzed. Invisible college concept was already known in the middle of 17th century, by scientists meeting informally, formalized later as a Royal Society, with membership limited to scientific elite.

An information gatekeeper is an engineer or a scientist assisting members of the organization in the use of information. The authors describe a society evolving away from formal communication pattern to the paperless, electronic communication. "Machine-readable data bases can be expected to replace many institutions that have been taken for granted as existing forever in print-on-paper form." (p.384)

LANDHEERER, B., 1957:

The author proposes a sociological concept of the 'principle of widening circles', referring to the increased number of readers with increased knowledge. Reading is a genetic habit, necessary for acquiring social status, for emotional release and for spiritual compensation.

Lanheerer identifies four categories of reading: (1) devotional (motivated by spiritual, emotional needs), (2) cultural (enhancement of one's status, and a goal in itself), (3) achievement (derived needs for a successful life), and (4) compensatory (recreational, relaxing). Not included is the reading considered as a means of communication.

A society "will always be expected to state its philosophy and its principles. It cannot refer to a 'way of life', because a way of life does not furnish an acceptable charting of future action . . . Although decisions are always taken when the need arises, the quest for a philosophy is the demand for security . . . if such a philosophy is lacking, a feeling of uncertainty results for which there are no remedies in compensatory reading." (pp.241-2)

"The function of the library is not the spreading of knowledge, but the development of human personality . . . reading means to absorb what is essential to one's mental structure . . . It is the uniqueness of the individual mind which furnishes the motive for writing as well as reading." (pp.248-9)

LANE, RUTH McG., 1935:

The applied philosophy of librarianship is a limited, applied social philosophy, explaining the aims, the functions and the reasons for existence of libraries. Library science has collected and organized facts about library techniques, library philosophy should explain these techniques to the community. The keynote of library philosophy is an inspirational and creative research. (p.151)

Librarianship is defined by Butler as "the transmission of the accumulated experience of society to its individual members thru the instrumentality of the book" (p.152). "Where science specifies, philosophy generalizes." (Ibid.)

LANGLOIS, RICHARD N., 1982:

The author makes a distinction between different contexts for the term 'meaning'. (a) In information content not all signs are equally meaningful and not all meaningful signs have the same meaning. (b) In structural information the meaning is defined in terms of information's action-response impact on the structure of the system, distinguishing between the meaningfulness and the value of a message. (c) In cybernetic system the meaning is defined by the system itself.

---- 1983:

Langlois discusses relationships between systems theory and social science, especially economics, and the ways the systems theory can illuminate concepts of knowledge and information.

System theory is an analytical or reductionist method in which knowing the parts is sufficient to understand the whole. That is, the whole is an aggregate of its parts, as contrasted with a holistic view that the wholes possess 'emergent' properties that cannot be derived from part (the whole is greater than a sum of its parts).

However, the relations essential for the existence of the whole cannot be fully accounted by the interactions of the parts, but must include the interactions of individual parts and the whole with the external world.

In holism, less information is better than more, because too much attention paid to parts, damages the Gestalt concept of the whole.

System theorists distinguish between terminal, causal system and goal-seeking system. In the former case, the meaning of the signal is the response it elicits. In the latter case, response is also the ultimate criterion of meaning; although we have to understand first the goal of the system before we can understand its meaning.

Meaning must always be defined in terms of the system, or the person, receiving the signal. However, information is not homogeneous, hence meaning is a matter of form not of an amount, and its value depends on the receiver and the message itself. The system theory and the theory of knowledge and information must be interrelated in their concern about the form and organization.

Other writers argue that human knowledge is tied to biological and cultural structures. Meaningful to human is only that which is referred to that structure. Such a meaning cannot be extrapolated from the external, context-free computer system.

LANGRIDGE, D.W., 1978:

Librarianship is neither art nor science , "it is a service provided for a community to meet their reading requirements, educational, vocational and recreational . . . the organization of knowledge is therefore a central concept to librarianship." (p.104). It is taught in library schools as classification and cataloging, focusing on techniques rather than aims; information retrieval and indexes, are defined in a narrow sense as the objectives of the knowledge organization.

The focus should be on fundamental principles of the disciplines, distinguishing not so much between theory and practice, but rather between facts (e.g., forms of indexing) and values (judgment of its quality).

Library science is not a synonym for librarianship. The former addresses theory, the latter the practice of the discipline. A distinction should also be made between the education and training for librarianship.

Ranganathan differentiated between the 'universe of knowledge' (a philosophical domain) and the 'universe of subjects' (a domain of librarianship). Both are important in the study of the fundamental principles of librarianship.

A library educational curriculum must include four major divisions: (1) systems of various disciplines within the universe of knowledge, (2) index languages (classification schemes, indexing, etc), (3) design and operations of whole systems (e.g., classified forms of catalogues), and (4) policy issues in choosing particular system.

LANIER, DON and DAN BOICE, 1983:

"The primary purpose of any code of ethics is to 'focus on individual members of the profession rather than on the institutional setting'." (Shirley Fitzgibbons, p.87)

Ethical issues include responsibility for professional work performed, commitment to library patrons, business practice, conflict of interest and loyalty to the profession, colleagues and the parent institution.

LARGE, J.A., 1988:

Information studies are interdisciplinary including management, computer science, communication, librarianship, psychology, linguistic and statistics, all with a strong practical component.

Information studies play an important role in society (research, planning, development, decision-making, problem solving and the learning processes). It is concerned with knowledge, skills, techniques and methodologies that can be brought together to provide effective and efficient information service.

Other disciplines should be thought from the point of view of information studies: they cover broad field of management and marketing, information technology, sources, systems and services, considering information in its social, political and cultural context.

LARSEN, SVEND. 1988:

The author discusses the issues related to the changing technology in the context of Lancaster's concept of paperless society.

New technology links most of knowledge sources in a single network allowing for instant, updated information; it is economic because it reuses existing information. However a library does not provide only the latest, ready-made information. It also makes available 'personal knowledge', an enlightenment in Kantian sense: "enlightenment is man's emergence from his self-incurred immaturity. Immaturity is the instability of one's own understanding without the guidance of another." (pp.160-161)

Information can be processed automatically without human intermediary. Such transformation of informal experience into formalized information can only in part be 'translated' (or formalized) into a software program. That part of programmed information can serve as a marketable commodity, stored and communicated by computer. But this by itself does not eliminate the library, since new technology never handles all the information.

Lancaster focuses on an easy, quick access to 'ready-made' information, free and open communication, ignoring social context and value systems that determine the choice of technology. In general, the development of technology is not a linear process; new invention does not eliminate old ones, but often exists side by side. Information technology will change some aspects of a library but will not eliminate it.

Lancaster views research as a cumulative process, focusing only on the latest information of importance to the researcher. This is true of natural sciences but not of humanities and social sciences, which are intimately connected with human values; human problems are not solvable once and for all, its literature is not obsolescent. He also feels that computer can assess the relevance of appropriate data. This is based on a concept of formalized rules and patterns than can be translated into software programs, thus changing personal and unstructured knowledge into structured and objectified. This is true in routine actions. However, non-routine actions require deliberation and creativity, important in a constantly changing knowledge: "it is impossible to construct a complete taxonomy of human knowledge, and therefore the fundamental problem of information retrieval is unsolved." (Ziman, p.173)

LaRUE, JAMES, 1993:

This is a call for questioning authority by providing citizens with relevant facts needed to correct wrongdoings of the politicians or people in authority, and to provide fiction to make people's dreams about better reality more desirable.

"Librarians are the intellectual auditors of our culture." (p.25) "They add up the philosophical capital, post the expenditures, and calculate the cultural balance sheet . . . [and provide] a means, an inexhaustible tap, a stream of knowledge that can topple tyrannies, unravel republics, and dumbfound democracies." (Ibid.)

LASKI, HAROLD, J., 1935:

The purpose of the public library is to make accessible to people the heritage of the culture, hence its value is determined by the significance or library collection and its circulation.

Library service should be provided to each of the four kinds of readers who read for (1) leisure, (2) self-development, (3) information for a specific purpose, and (4) scholarship and research.

The essential task of librarians is to provide guardianship of culture by protecting its essential aspect, freedom, by resisting censorship.

LAZAR, PETER, 1984:

Librarianship, information science and documentation are closely related disciplines.

In the last 100 years the major focus of librarianship was gradually changed from storage and processing of document, developing cataloging and classification to social relations of libraries and library management, in both period lacking systematic foundation.

The approaches to library theory were pragmatic in the USA, historical in Europe, and later conceptual, expressed by Ranganathan's Five Laws of Librarianship. A new approach is offered by general theory of systems; in it "every library is an open system which is closely interrelated with its social environment and is continuously communicating with the environment through various interfaces." (p.5)

The open information system communicates with its environment through four interfaces: (1) an input interface (acquisition of information), (2) a user interface (output service), (3) material and financial resources input interface, and (4) the interface for human - in and out - flows.

"The structural isomporphism of the information systems modelling both libraries and information centers and the logical homology of these systems provides the philosophical background for the analogous handling of libraries and information centers." (p.5)

LEARNED, WILLIAM S., 1924:

"Discovery, formulation and diffusion of true and useful ideas is . . . the fundamental method of human progress." (p.3) The distinction between advancement and diffusion is primarily a reflection of social philosophy, stressing either the pure research or popularizations of its results. However, both are important. Diffusion of knowledge has a fundamental and far reaching impact on human conduct.

Three types of knowledge are identified: (1) news, mostly commercialized, (2) verified scientific facts, matured judgments and constructive imagination, and (3) instructional knowledge.

Initial lack of organization of knowledge for adult use is being made up by library collections available to all its patrons; there is a need for improving the techniques of making easier the access to these resources, by matching the interests of an individual patron.

There are two kinds of discovery: (a) recognition of mental and emotional attitudes of people, and (b) trial and testing of the variety of applications of knowledge to individuals' mental states. Both expanded the diffusion of knowledge, by recognizing different types of library patrons, adjusting library services to their unique needs.

LEKAI, EMERY.A., 1977:

The function of philosophy is (a) to put the mechanics of our thinking in order, and (b) to identify the totality among the specializations, (c) the meaning of the whole, and (d) the meaning behind the pieces of information.

Librarians should be the generalists specializing in the search for the totality, in terms of relationships between books in library collection. Information is only fragmentary and can be easily handled by computer. The librarian must transcend that level, since information never amounts to knowledge. Everything should be seen in perspective, in context, and in relations.

LE MOIGNE, JEAN LOUIS, 1985:

A lack of epistemological foundations in information systems can be overcome by (a) considering information systems as a science of design. (b) replacing classical formal logic by modal and self-referential logic, and by (c) introducing memorization system in the modeling of complex systems functions and their internal transformation "in order to integrate in the modeling process, both the functions (synchronic) and the transformations (diachronic) of organizational information systems." (p.247)

LEUPOLT, MARTIN, 1981:

"Nature and society exhibit three material factors by which they continually change and develop on the basis of inherent contradictions: (1) matter (mass), (2) energy, and (3) type and degree to which they are organized." (p.19) "Information is a change in the organization of concrete (receiver) objects or subjects, respectively, taking place each time under specific conditions; it consists in the fact that the receiving objects or subjects obtain a message on the existence, structure and functioning of other objects or subjects, by way of organization transfer." (Ibid.)

Thus, the information originates as the reproduction of organization of a specific (sender) object or subject, within another (receiving) object or subject where the receiver's existing organization is changed, positively or negatively, in certain quantitative or qualitative way. Information processes may be technical (material) or scientific (conceptual), individually or socially organized.

---- 1983:

Information originates and is generated "because there exists a need or an interest depending on the existence of a 'receiver' within a specific environment . . . [expressed] in specific individual requirements for specific information." (p.3) It is a product of the transfer process of organizational structure to reduce the uncertainty within that organization.

"The subjective information need is an integral constituent of the objective one and differs from the latter in that it represents that part of the objective information need that has not yet been realized (satisfied)." (p.4)

"To the degree to which the respective society identifies and analyses its objective and subjective information need and organizes its satisfaction, it will also influence the development of human requirements for information and for qualification (for knowledge and control of the real world), as well as influence the meaning of these requirements." (p.7)

LEVINE, MARILYN M., 1973:

The author argues that librarianship is not a profession. This conclusion is based on John Stuart Mill's distinction between a denotation (within a definition) and a connotation (ideas suggested by the definition), together providing the meaning of the term defined.

A denotation of the term 'profession' implies professing a dedication of the learned professions in theology, law and medicine. The connotation implies faith and purpose in saving human life, defending justice and spiritual salvation.

Librarians as curators of civilization do not save life but books. "What librarians need is a strong creed and a public avowal of their intention to search for the steel cables to replace the spider webs that hold up civilization." (p.385)

---- 1981:

This is a criticism of H.Curtis Wright consideration of 'ideas' as metaphysical entity. To Levine this is nonsense, since the 'idea' is a hypothesis, and it arises when a problem requires solution.

Ideas as social hypotheses are rarely tried because they would require experimentation with human beings. Communicating ideas means communicating untested hypotheses.

The author feels that for librarians the idea-as-hypothesis should be: if librarians do 'x', then people will read more books. "The information scientist who tests this hypothesis will be the first of the true scientific leaders for the science of ideas without metaphysical claptrap." (p.2)

LIBRARY ASSOCIATION (Great Britain), 1980:

This draft of the Association's professional code of ethics is based on Francis Bacon's notion that 'knowledge is power', and on the concept of freedom of access to information.

The ethical problems for librarians increase with the decreased specificity in the definition of knowledge in its social context, and with lack of information. In organizing and disseminating knowledge, librarians reflect the development of social needs and society's mandate to provide access to all forms of recorded knowledge.

The code stresses librarians primary obligations to their clients, equality and confidentiality of service, obligations to the parental institution, professional competence and professional judgments free of external, financial influences.

Lin, J.C.R., 1965:

Licklider anticipated the concept of 'expert systems' by describing possible application of a computer in information retrieval, as a procogntive system based on a dialogue between user and the system. However, he did not recognized the problem of the nature of knowledge itself, manifested differently in different disciplines.

He called for rejection of the concept of a physical library, the schema of the book itself, and even of the printed page as storage devices, as not sufficient by themselves in procognitive systems that will be needed in the future.

LIGOMENIDES, PANOS A., 1985:

"Spatiotemporal 'forms' appears in the symbolic space, either as an output in the course of reasoning or as a product of natural processes of law and chance. Form may be recognized as 'information', filtered, interpreted, abstracted into experiential and expert knowledge, and acted upon by biological or artificial reasoning, to produce more forms and information. Information is viewed as the commodity of communication and mentation, and as a central actor and force in shaping the world around us." (p.149) "This is of essence, if we are to reveal the mechanism (if any) of biological reasoning, and of the evolution of biological and human cybernetic systems." (Ibid.)

LILLEY DOROTHY B. and RONALD W. TRICE, 1989:

The book identifies three components of information science: (1) trends, (2) leaders, and (3) environment for the development of the discipline.

Trends are divided into 5 historical phases: (1) information science: 1945-1968, (2) nonconventional information systems: 1948-1968, (3) library applications: 1958-86, (4) online activities: 1940-1985, and (5) networks: 1965-1985 (elimination of geographical barriers).

The major focus is on trends in emerging discipline aiming at the availability of information based on the economy of scale: more extensive the use of information, cheaper the service.

Two major types of information science are identified: (a) indexing (databases), abandoned by librarians, and (b) cataloging, not yet embraced by information scientists.

The environment for the growth of information science consists of conferences of the specialists, sociological changes in the human attitude toward computer, and technical developments.

LINDSAY, JOHN, 1977:

The author is critical of the ways library functions are defined. "To swim briefly through some of the literature which deals with this aspect of library practice consult Nitecki who says 'a proposed main objective of the library is justified by indicating its closeness with other ideals as already highly desirable in the society', 'the library [is] conceived as an institution serving social democracy and the self realization of its citizens'. Similarly, Joekel, Wellard, and Kolitsch, who goes as far as to say that a theory of librarianship would indicate the identity of the objectives of democracy and librarianship. McColvin says 'in a modern democratic society all people must be freely able to use and read, without hindrance or bias or limitation, all those books that will make more or less significant contributions to their lives.' While James Thompson says that librarians 'as the guardians of freedom of thoughts are the bastions of liberty'. And Foskett says that as democracy depends on an informed electorate and the source of information of the electorate is the public library, cuts in public spending on libraries are an attack on democracy." (p.47)

Lindsay points to the lack of scrutiny of these social beliefs by not questioning the real value of the democracy as presently practiced in the West. Different interpretation of democracy is offered by Lenin, Marx, or Mills and different interpretation of librarianship in other countries; a gap between liberal humanism of the last century and the contemporary revolutionary socialism requires much more rigorous consideration.

He argues that the concept of linking the freedom of an individual with his social dependency, and aiming at improving patrons life, and giving them what they want leads to 'an irreconcilable contradictions.'

By "using words that no-one understands and which allow maximum confusion philosophy becomes mystification and practice justifies the legitimacy of the power of those who exercise it, both acting together in the interests of those on whose behalf it is exercised." (Ibid.)

LINDSEY, JONATHAN A., 1994:

Till late 20th century library ethics was defined in terms of the accepted rules of behavior. After 1970, with the introduction of automation the concepts of ethics and professionalism were joined.

The scope of ethics in librarianship can be defined in terms of three basic concepts of integrity, morality and the interpretation of ethics.

Integrity relates to the responsibility for the collection, conservation and preservation of resources. Since last century's public library movement, the distinction between integrity and morality narrowed considerably. The interpretation of morality is culturally determined.

In United States the official statements on ethics were codified in 1976 and 1981. They provide no behavioral prescription, although the concepts of intellectual freedom, professional relationships and services within and outside of a library were formally accepted by the profession, but not enforced.

With the development of informational technology ethical interests become worldwide, with the focus on copyrights and protection against liability. The most developed are the codes of ethics in special librarianship, especially in medicine and law.

However, the pluralistic library education in the United States resulted in a lack of homogeneity in interpreting the common body of library knowledge, professional identity and uniformity in the entrance requirements to the profession.

"Because of this vacuum, ethics among librarians has been an amalgam of morality and integrity, which, interacting on the basis of the strength of mores, has provided the grounds for the extant codes of ethics and for the continuing concern with moral behavior evidenced in the literature." (p. 188)

LINDSEY, JONATHAN A. and ANN E. PRENTICE, 1985:

This is a review of the development of ethical code by American Library Association. The focus is on case studies related to the professional behavior of librarians. The book offers no philosophical analysis but is a valuable resource material for further research.

LINE, MAURICE B., 1964:

Librarianship is a social science. This implies a number of relationships between librarianship and social interpretations of its mission. (1) The selection of material for library patrons is conditioned by social, political and religious beliefs; (2) this provides librarians with a social weapon that should be used carefully; (3) librarianship must be considered in the social context and judged by social and moral standards; (4) librarianship provides means of communication between books and their readers, requiring knowledge of books, their readers and communication techniques.

"The study of books includes their arrangement, their physical form, and their contents . . . the study of people [requires] some understanding of them . . . sympathy with them. (p.272) "The importance of knowing people is one very good reason why the traditional book-worm-librarian has no place in a library." (Ibid.)

---- 1968:

"We see deficiencies of our libraries, but we do not know what useful purposes are hidden by these same deficiencies." (p.151) Thus, by automating what we do not understand, we may do it at the expense of omitting real advantages of non-automated library systems.

"The function of the university library is to bring together information and knowledge on the one hand and human beings on the other." (p.148) Information is more than just a page in the book, it extends to its layout and its form. It is transmitted from the human brain as a source through the transmitter (recorded information) to the receiver and his brain.

Transmitted information is never exactly what the brain conceives because of the engineering and semantic noises contained in the book and cataloging structures. The library is expected to transmits the message with the minimum amount of noise possible.

However, library communication is limited by its one-dimensionality and linearity (one theme at the time), its visual form (offering repetition not redundancy), information threshold, recall and relevance. "The more the search formulation is restricted, the higher the ratio of 'relevant' to non-relevant items, but the greater the loss of relevant items." (p.152)

Only the reader's brain can retrieve the information it needs. "We cannot evaluate the adequacy of a system solely from the use of it, for this use is itself conditioned by the system." (p.150)

---- 1975:

A library has a number of mysteries (of its operations), mystiques (terminology used), a high noise-to-signal ratio literature (often of little significance), the idea of eternity (collections build for the future use), and dependence on numbers (statistical interpretation in e.g., citation analysis, modeling and operations research).

Donald Urquhart demystified these notions by ignoring their existence, by stripping the descriptions of librarianship to their bare essentials, and by considering means that need improvement in terms of the end aimed at.

"What harm has mystification done? In small quantities, indeed, it can be relatively harmless. But in general, it inhibits change, wastes staff and money, confuses users, corrupts education and training, and pollutes research." (p.116)

---- 1983:

Many of the library changes suffer from the problems not identified, alternatives not explored. Professional education "stresses knowledge rather than imagination, analytical ability and the spirit of service. (p.6) "We lack humanity as well as intellect, imagination and initiative. (Ibid.) "The boundaries [of librarianship] seem very fluid with the new developments. Doesn't our area include publishing book, selling, broadcasting, telecommunications, computer processing and advertising? We must see our future in this broad context and to achieve this we must return to fundamentals. What is the future society, what will individuals need for information and leisure, as well as research. The failure of initiative is implicit in all this." (Ibid.)

---- 1991:

The 'eternal values' of research libraries are defined as the values of (a) scholarship determined by the access to resources, (b) service to scholarship, and (c) educational values beyond the satisfaction of immediate needs. "The values of libraries cannot be separated from those of society; they not only reflect them, but can also help to influence them." (p.51)

LIPETZ, BEN-AMI, 1966:

Information storage and retrieval are concerned with methods of creating and managing collections of records by facilitating the recovery of pertinent records. The computer provides high speed access to carefully defined and limited stores of records.

However predicting human information needs based on understanding the ways people make associations and value judgment is an intellectual problem. Automated devices used to store information improve library efficiency, but the provision of instant access to everything ever published is far from being developed.

---- 1980:

"The fundamental and unifying activity . . . in information science profession is the facilitation of the utilization of records." (p.21) The tree relevant concepts are records, utilization, and facilitation.

Record is anything durable that can convey meaning through written or spoken language.

Utilization describes how people might be served by records. Use of records is characterized by motivation or by involvement. Various uses may be expressed statistically, sociologically (attitudes), psychologically (comprehension), physiologically (ability to acquire information), and by information theory, (potential and actual use of information channels).

Facilitation refers to knowing about possible actions, their relative values and ability to carry out or organize such action. The historian or an information scientist is interested only in the study of records and their use. The practitioner has desire and ability to facilitate the use of the records.

LOCK, R.N., 1973:

The author asks philosophical questions: Why books are collected and made available to public institutions? What are the principles behind desire for transmission of knowledge, preservation of older material and creation of new ideas?

The answers to these questions are reflected in library administration, which defines objectives, establishes criteria of adequacy, and provides mechanism for library adaptation to perennial changes in societal context.

19th century ideal of free and universally available library services was neither desirable nor economically feasible, thus leading to the separation between university, public and special library, each serving different clienteles, with the diminishing common denominator.

LOFGREN, HANS. 1985:

This is a criticism of Daniel Bell's contention that recent technological development rendered much of the analytical approach of an industrial era obsolete.

This viewpoint is challenged by scholars, yet the view is endorsed by many library writers. The concept of information as a basic resource of advanced economy is appealing to the information workers, hoping to play major role in the 'new age'. This attitude is reflected in "a shift away from the outlook which has dominated mainstream librarianship. (p.28) Theoretically it was influenced by the nineteenth century social and political philosophy of liberalism with its emphasis on the role and rights of the individual . . . for example the right of the public to free access to documents." (Ibid.)

The contemporary library and its traditional ideals of culture and education are considered as outmoded and unrealistic. This new approach serves "to reinforce the self-image of the librarian as a professional with technical proficiency, selling services to whomever is able to demand and pay for these, belonging to the technical-professional elite."(Ibid.)

"Thought it is an ideological current which in itself is not a major cause of changes taking place within library and information field, it legitimates and reinforces a move from the 'liberal', mainstream tradition of librarianship, to a business corporate' market approach to libraries." (p.29)

LUCKHAM, BRYAN, 1971:

"The philosophy, objectives and role of the public library have sometimes been discernible only in retrospect by historian, endowed with the objectivity given by distance." (p.1)

The library function can be defined in terms of what clientele the library serves, and what kind of library is best suited to serve that clientele. In the past British public library has been seen as an adult's educational and recreational agency; patrons were an elite, highly motivated to seek self-improvement. It however could not become working-class institution because of its middle-class culture.

In the twentieth century British libraries "the obligation to provide some form of redistributive justice for the educationally underprivileged appears to have been quietly dropped. Instead, the task of the public library comes to be seen as that of universal provider, available to all, with its priorities less clearly demarcated." (p.5)

British libraries faced the dilemma: "how to steer a course between the scylla of involvement with, or absorption by, the formal education system and the Charybdis of being lost in the infinite expanse of general culture and recreation." (p. 1). It chose a passive role as a storehouse of knowledge and culture. However, although the official definition of library activities was limited, many individual librarians redefined the mission of their library in terms of the specific environment of each library.

LUKENBILL, W. BERNARD, 1983:

In 1930s Shores introduced the concept of 'library college'(learning in the classroom through the interaction between faculty, librarians and students) and 'the generic book'(media formats as extensions of the book). Learning effectiveness can be improved by applying generic book in library college model. The concept was not accepted primarily because of its cost and lack of expertise by both teachers (in a bibliography) and librarians (in subject areas).

A lack of a conceptual framework in librarianship prevents development of theoretical foundations for research and practice. Librarianship as a social science deals with "intellectual and information records produced by humanity in the course of social interaction and communication." (p.110)

"Many social science theories are based on assumption about the nature of people in social context and relationships." (ibid.) They "are unprovable; they cannot be easily submitted to empirical verifications [furthermore] many social concepts do not have commonalty of meaning among all social scientists." (ibid) This "leads to the rejection of some research conclusions . . . [and] is also a fundamental problem in library science." (Ibid.)

LYLE, GUY R., 1963:

In pioneer days librarianship was "an endeavor to persuade people to read, enjoy, and understand the value of good book." (p.2) The period "from the twenties through the forties -

reflects the gradual transformation of the librarian from a scholar or intellectual leader into one skilled in organization, administration, and personal and public relations." (p.3)

Library functions are (a) to serve education and to entertain, by selecting and making books freely available, and (b) to organize library resources for effective use.

Any reading for pleasure always provides some knowledge. The book selection counterbalances the mediocrity of mass culture by evaluating each selection in terms of its content documentation, objectivity, accuracy, comprehensiveness, readability and permanence.

There is "an essential connection between advances in knowledge and the discovery of truth and the indexing, analyzing, and cross-referencing librarianship. By acquiring, indexing and coordinating, the librarian strikes the balance, corrects where previous representation misled, and drives the harder the next researcher seeking the truth." (p.9)

LYNCH, B., 1979:

The author identifies two major themes in the library literature on organization and management: (1) a library considered in terms of its formal characteristics, stresses relationships of hierarchy of authority, size, rules and division of labor, aiming at ways to achieve maximum administrative efficiency, and (2) studies of informal processes in the library, describe experiences, attitudes and behavior of individual staff participation in organization. Their objective is to find organizational characteristics which inhibit the achievement of library goals of service. These studies complement each other, with however little synthesis into a single framework.

Popular meaning of bureaucracy expresses inefficiency and red tape; the sociological meaning refers to administrative aspects of organization, with the tasks to maintain and coordinate activities of its members.

Bureaucracy and professionalism have a lot in common; each requires impersonal detachment, specialized competence and basic decisions on rational application of standards. However, bureaucratic authority rest on official position rather that on technical skills or competencies; it requires compliance under a threat of sanctions. On the other hand, professional authority rests on possession of expertise and abstract knowledge supporting skills: it is self-governing through associations of peers, professional standards, ethical conduct and is service oriented.

Libraries are bureaucracies performing routine tasks that reduce uncertainties, increase predictability and centralize authority with a tendency toward internal efficiency. The bureaucratic form of libraries aims at control of library environment.

LYNCH, MARY JO and GERALD HODGES, 1994:

The survey of library professional concerns, conducted in 1993, indicates that the access to information, legislation, funding for libraries and intellectual freedom remains most important. Among the new concerns registered since 1985 is information technology research that was ranked 11 in importance. The philosophy of librarianship was considered the fifteenth, among the sixteen most important areas of conceptual interest to librarians. The questionnaire also listed 56 areas of action that identified things to do.

LYDENBERG, HARRY MILLER, 1933:

The author offers a "plea for particular attention to the occasional gifted spirit who can stand forth and inspire confidence as a teacher . . . as he offers the book to the reader. This intangible, immaterial quality, not easily defined but unmistakably recognized when present and exercised, is of paramount importance in the librarian who, linking reader and book, is unquestionably a part of the movement for adult education and who values his association with that movement as among the most satisfying in his career." (p.264)

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MAACK, MARY. NILES. 1986:

The diffusion of innovation was th major American impact on the philosophy and practice of public libraries in France. In the period of 1900-1950 it was evident in the French introduction of open access, children work, adult programs, bookmobiles, special training for librarians, author/title catalog, Dewey classification, and reference service.

MAAG, ALBERT, 1979:

In his review of David Gerard's book (1978), A. Maag cites the following philosophical questions: "What is the relationship of libraries to societies in which they exist and to societal change? Which individual groups, and classes should benefit from library services, and who should have ultimate control of Libraries?" (p. 2549)

He singled out three writers representing American librarians' responses to societal changes: (1) Margaret Egan (advocating revolutionary approach), (2) Paul Wasserman (calling for library leadership), and (3) Mary Lee Bundy (stressing revolutionary change in the role of a public library).

The reviewer concludes that social purpose of libraries in the 19th century England was a pacification of poor classes "subordinated to the political and economic ends of an all-pervasive ideology." (Ibid.)

MACHLUP, FRITZ, 1962:

Machlup defines knowledge-producing industry in terms of its economic impact on knowledge itself. He identifies three semantic definitions of knowledge: (1) knowledge as a particular kind of belief, (2) belief as a particular kind of knowledge, and (3) knowledge and belief as two different concepts.

The three interpretations are mutually exclusive, interrelating philosophy of knowledge (epistemology) with the philosophy of language into a fusion of two different meanings of knowledge: the known and the knowing: 'knowledge as that which is known' and 'knowledge as the state of knowing.' (p. 113-114) Machlup does not clearly differentiate between information and knowledge: to inform is to convey knowledge and to be informed is to know.

He further distinguishes between types of knowledge (from intellectual to practical) and knowledge-production agencies (from creators to interpreters of knowledge).

The major components of knowledge industry include: education, research and development, communication media, information technology and service. Public libraries are considered part of education and special libraries are altogether excluded from the list as statistically insignificant.

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---- 1983:

Information can be defined as: (a) the verb 'to inform', to form (the mind, character, etc.) by imparting learning or instruction, or as (b) the noun 'information' when it has two meanings: (1) as the action of informing, (telling something) or (2) as that of which one is apprised or told.

Machlup criticizes (a) the triad 'data-information-knowledge' as relating to different aspects of cognitive processes, (b) consideration of data as observation containing information, and (c) the use of various synonyms for information.

Distinction between knowledge and information is threefold; information can be (1) piecemeal, fragmented, particular, as contrasted with structured, coherent and universal knowledge; (2) it is timely, transitory, while knowledge is of enduring significance; (3) it is a flow of messages, knowledge is a stock; (4) it is acquired by being told, knowledge can be acquired by thinking, often without new information being received; (5) it is a process, a current, specific content, or an accumulated content; knowledge is a state.

Kochen feels that both information (raw) and knowledge (interpreted) are data. Occasionally, differentiation is made between the mechanistic representation of the symbols (data) and the meaning attributed to the symbols (information).

Information is sometimes linked to decisions, by removing uncertainty. Distinction is also made between information, its representation and transmission.

Something is not information unless: (1) it is about something unknown to the recipient; (2) and previously less assuredly known, or (3) it affects the stock or structure of the recipient's knowledge; (4) consists of raw data only; (5) is useful to the recipient; (6) is used in decision-making; (7) bears on the contemplated action; (8) reduces uncertainty; (9) helps to identify contextual meaning of the message; (10) excludes some alternatives; and (11) changes some beliefs.

In social sciences differentiation must be made between (a) information in metaphoric sense (no cognitive processes are involved) and traditional concept of information (mind interprets meaningful perceptions), (b) methodological and political individualism, and between (c) social information and social knowledge (with society quite different from individuals who constitute it) and system thinking.

Information can be either (a) a living phenomenon (individual transmitting and receiving signals, interpreting them, making decisions based on them), and (b) nonliving organisms (used metaphorically, since there is no information without an informant).

The notion of information used as a statistical probability of signs being selected, does not define the term 'information', it refers to signs, not to their meanings.

Knowledge implies knowing-what and knowing-how, an abstract, scientific knowledge demonstrable with certainty.

For philosophers of language information is defined in terms of semantic content of statements; for logicians it consists of statements, containing information determined by relative number of excluded alternatives. Semantic information may also be seen as reduction in uncertainty and change in belief.

Philosophy speculates about matters not yet developed by science, telling us how much of the assumed knowledge isn't knowledge. One distinguishes between philosophy of systems and system theory (science of systems), between pure, applied sciences and art, the know-how, contrasted with, but also based on, scientific know-that.

MACHLUP, FRITZ and UNA MANSFIELD, 1983a:

This is a collection of papers addressing the logical, methodological and pragmatic relationships among various on information-centered disciplines.

The book contains essays on cultural diversity, information science viewed in the perspectives of cognitive science, informatics, history of Artificial Intelligence, linguistics, library and information science, cybernetics and history of information theory.

The specific topics discussed by the contributors include; (a) cognitive, computer-oriented interpretation, (b) representational aspects of computer science (informatics), (c) dichotomies of artificial intelligence (such as between philosophy and psychology), (d) syntactic and semantic models in linguistic interpretation of information, (e) relationships between library and information science, (f) feedback and control aspects of cybernetics, and (g) entropy model in information theory.

---- 1983b:

Information is addressed by the following disciplines:

(a) Information science concentrates on practical issues based on experience. It is defined as (1) a systematic study of information, (2) a study of phenomena of interests to specific disciplines, and as (3) a study of application of new technology (e.g., library science).

(b) Library science is also practical and empirical stressing the bibliography, cataloging, indexing, reference, management, organization, acquisition and circulation.

(c) Computer science (Informatics) is an empirical field, its subject is a computer itself and its processes.

(d) Artificial Intelligence overlaps with (1) philosophy (reasoning processes), (2) linguistics (meaning of relations between objects, or symbols), and (3) psychology (perception, personality). It focuses on: (1) engineering mechanics, (2) psychological, human related, problem solving, (3) computers algorithms and processing program language, (4) cybernetics based on modeling of human mind, and (5) robotics.

(e) Cognitive science is considered a metadiscipline that includes: philosophy, psychology, empirical aspects of linguistics, interrelationships between computer, neuroscience and cybernetics, general systems theory and Shannon's communication theory.

The goal of cognitive science is to provide balance between analysis and synthesis in the representation of knowledge.

(f) Mathematical interpretation of information is based on symbolic manipulation of algebraic formula, utilizing engineering symbolic manipulation of physical systems by computer.

"Communication, one of the possible alternatives for the term information, is also a word with multiple meanings . . . We conclude that Shannon was right in calling his results a theory of communication and he should not have allowed his followers to call it information theory." (pp.49-50)

"Thus, depending on how one looks at information theory, it may be subsumed under very different categories of knowledge, ranging from practical-technological via empirical-statistical top abstract-analytical." (p.56)

MacKAY, DONALD M., 1969:

Information changes what we knew before by changing its symbolic representation. "By systematically studying what happens when something is affected by the size of an object . . . [one] discovers the meaning of the term." (p.157)

Representation is a structure with some abstract features in common with the thing it represents; information is always about something, it justifies representational activity. The operational definition of information is formulated in terms of its effects.

Information-content is (a) an amount of information as a measure of different things (scientific or descriptive information-content), or (b) as that which determines choices (selective information-content).

Information determines form by (a) construction which includes number of degrees of freedom and weight of evidence, and by (b) selection that includes unexpectedness. Information theory addresses the issues of measuring changes in knowledge.

MACLEISH, ARCHIBALD, 1939:

In the past the choices have been between economic reforms or revolution, between the s.c. Americanism or Communism. The true threat to free culture and democracy is the threat not of any person or groups but of a condition. Only libraries, because of their objectivity, can save American democracy in crises, by making available to the reader the knowledge of its democratic culture. Librarians learned how to get the books for the readers, but not yet how to get readers for the book.

---- 1940:

In the past the government was involved only in providing opportunities for education in a form of self-improvement. Nowadays the government understands and admits affirmative interest in the education of citizens as a prerequisite of democracy. It is the library's responsibility to bring to the citizens all needed information as a part of such education, to mediate between the books and those who needs them.

---- 1940a:

A librarian is so called not for what he does, but from the place in which he does it. The two meanings of the 'book', as a physical or an intellectual object, are overlapping and confusing; yet the distinction is significant.

If a librarian is a keeper of a physical book then he is a custodian, reliable, orderly, industrious and patiently waiting for the patron; but as a keeper of an intellectual book, he is an active, affirmative advocate of learning and of the importance of a library in society. It was not necessary for the librarian in the age of learning to advocate it. However today, when learning is not universally honored, the librarian becomes the 'counsel for the situation', responsible for the inherited culture, entrusted to his care; he must represent it as its advocate, he cannot be neutral.

---- 1940b:

The library profession should be defined in terms of its unique, difficult, and essential functions that require its own discipline, techniques and ethics.

The social functions were defined at times as: (a) keeping people out of mischief by harmless recreation, (b) improving people's education, (c) assisting in developing crafts, and (d) improving employment. Current crises (war) call for preserving and defending democratic institutions by providing information about them.

H. Gleen Brown objects MacLeish's "suggestion that in saving democracy we may find the social aim justifying our professional claims [this view] is unhistorical and uncritical." (H.G.Brown, 1940) Librarians protect records of civilization not a particular form of government, and the 'education for democracy' limits the concept of education and confuses the aims of librarians with those of teachers.

---- 1972:

The essence of librarianship is defined in terms of the poet's concept of a universe composed of causes, relations and meaning, all recorded in the book.

The book is a report on the mystery of existence and the interpretation of people's experiences over time. The contemporary world does not care for meaning, it focuses on relevance. In the library, books taken as a whole imply the meaning of the universe that can be understood through reading. "Meaninglessness, like meaning, is a conclusion in the mind, a reading, an interpretation of the book content." (p.361)

MacPHERSON, HARRIED D., 1939:

The author quotes a number of librarians arguing for the sociological philosophy of cataloging. In addition to the technical objectives and rules of cataloging, the philosophy must also (a) indicate the purpose, content and relations to the other works; (b) reflects the goals and changes of its parent institution; and (c) catalogers must belief in their own work and be aware of work done in other institutions, which change with the changing times.

MAIN, LINDA, 1990:

This is an argument against the importance of research in the education of librarians. Technology is demanded by the professional needs that are overwhelmingly based on experience and practice: theory is important but not as the abstraction about the role of information in a society, its values or ethics.

Theoretical models limit the scale of professionalism and reduce the confidence in the ability to solve problems; the demand is for updating skills not the theory, hence there is no need for a concern about theoretical or philosophical issues.

"Shera's philosophy that 'regardless of library speciality, the librarian who is a scholar, irrespective of the branch of scholarship in which he may be trained, will succeed . . . has no relevance for library and information science today." (p.227)

MANGLA, P.B., 1984:

Author traces the development of research in library and information science from the last quarter of the last century till the present; beginning with Melvil Dewey library school in 1891 and maturing in the establishment of the Chicago's Graduate Library School in 1928.

Among subjects of research listed by the author were: (a) sociological approach (P. Butler, D.Waples, C.B.Joeckel, (b) library education (L.Shores, S.Ditzion, L.R.Wilson, Shera), (c) information science (Saracevic, Rees), and (d) cataloging (Cutter, Panizzi, Ranganathan).

Major contributions included: (a) in applied research: development of new methods, techniques and gadgets, (b) in cataloging and classification: subject and cataloging rules, Dewey and Colon classification systems (c) in administration: open shelves concept, management, operations research technique, (d) in education: graduate library schools, (e) in basic research: information retrieval, computer and applied mathematics, (f) in conceptual approach: understanding library and information science in terms of philosophical, psychological and linguistics factors

"The emphasis on descriptive or historical studies . . . [of] the initial stage has now shifted towards the role of libraries and information centers as important institutions in the overall chain of acquisition, organization and transfer of information . . . primarily because of two factors: (i) continuous proliferation of information, both quantitative and qualitative; and (ii) the recognition of the fact that information is an important national resource, access to which must be made possible for all who need and can benefit from its use." (p.282)

MANLEY, WILL, 1993:

The author poses a question, whether politically incorrect statement or behavior, such as e.g., sexist comments made in a discussion aiming at the enhancement of personal assertiveness, are protected by the principles of intellectual freedom. Listing a number of points and counterpoints, the author asks whether degrading or insulting comments that espouse hateful and stereotypical views should be banned from the library collection. Censors have the rights to express their views, although granting such rights creates dangerous precedents. The argument in favor of removing the book from a collection as out of date, offensive, propaganda, or a promotion of ignorance, are countered by the arguments of their historical values, illustrating contemporary social issues, supported by library responsibility not for the effects of a given book on its readers, but for providing diverse viewpoints, exposing ignorance by open access to it for examination, understanding and confrontation.

Manley does not take the stand on the controversy, but instead asks the readers for their opinions on this issue.

MANSFIELD, UNA, 1982:

Information science is contained in three groups of disciplines. (1) The processing group of data: computer science (informatics), telecommunication, robotics, library science and decision science. (2) The cognitive group of intelligent entities: includes cognitive science (cognitive elements of psychology, anthropology, linguistics, philosophy, neuroscience, and computer science), cognitive and computational psychology (simulation of cognitive processes), artificial intelligence, linguistics and communication). (3) The systems group focusing on feedback and control: cybernetics, operations research, and aspects of systems philosophy, analysis, empirical, research and engineering.

---- 1987:

"Like the natural sciences or the social sciences, the information sciences neither have nor need a unified conceptual framework or many common fundamental postulates or axioms. Nevertheless, it is possible to group these sciences according to their general perspectives on information research." (p.50-51)

Mansfield identifies perspectives of three sciences, each listed in her 1983 essay. (a) The cognitive perspective concentrates on 'the principles by which intelligent entities interact with their environment' (p.53) It searches for a systematic theory of knowledge representation. (b) Socio-technological perspective "focuses on problems related to recorded information (knowledge), its generation, classification, processing, storage, retrieval, display, use, transfer, and accessibility." (p.60) and (c) The systems perspective "provide a theoretical base for the information sciences . . . they are general system theory - the science of relations, cybernetics - the science of controls, and information theory - the science of transmissions of information." (p.66)

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MARCO, GUY A., 1966:

Philosophy of librarianship is defined in terms of its objectives: what is planned to be accomplished rather than as means and methods of accomplishing them; the 'why-what' rather than 'what is the purpose, what are the ideals of librarianship'. Technical questions can be answered specifically and are verifiable; philosophical questions are metaphysical, ethical and esthetic.

Library philosophy is out of tune with national ideals by not following the principle of innocent before proven guilty. For example some books are deselected because of their potential negative impact on the society.

Marco identifies two basic approaches to philosophy of librarianship: (a) Butler's consideration of a library as an agent of society and (b) Broadfield's focus on a library as an agent of an individual. Butler is also concerned with an individual but within an ethical framework of community, he would approve some censorship in interest of societal harmony, Broadfield would allow none.

This distinction sets a social and humanistic polarity. We can choose one or the other approach but cannot have both together, they cancel each other out. (A comparison to a metaphor of white and red wine, each appreciated separately, but of no value when mixed).

Thus, the library purpose may be defined differently.

(a) Butler sees archives preserving history of civilization as a major function, stressing the importance of history of bibliography and library as an instrument of society. (b) To Broadfield a library is a servant of an individual, protecting his freedom of thought with no boundaries. Individual not a society or library is a sole judge of the value of reading material. (c) Jewett sees library philosophy as a part of specific philosophy of democracy. (d) Danton considers philosophy of librarianship as an expression of the profession's "aims, functions, purpose and meaning . . . a set of clear objectives constitutes the essence of a philosophy." (p.8)

MARCHANT, MAURICE P., 1975:

"The concepts of economic theory, economic system, and economic model are discussed as potentially applicable to libraries. Two types of such models are developed from data drawn from university libraries. One predicts professional staff size from two variables: collection size and collection decentralization. The other identifies a set of library inputs composed of professional staff size and subprofessional staff size, and annual acquisitions rate as a consistently good predicator of library expenditures and a stable measure of library input." (p.449)

MARSHALL, PETER, 1976:

The library as a source of information, although important, is not a central purpose of all libraries. The focus on information restricts knowledge to facts, yet in non-scientific, spiritual matters truth may not be so obvious, requiring discriminating judgment, which is sometimes in conflict with intellectual freedom

The concept of "value-free fits well with the ideas of information and intellectual freedom . . . [but] to be value-free is to deny any absolute values - itself a value judgment - while creating a new value by setting a premium on being value-free." (p.231) "If there are no values, then why read?" (Ibid.)

The author accuses libraries of insisting to give people what they do not want, replacing traditional moral values by meaningless facts of information.

MARTIN, LAURA K., 1964:

A comprehensive statement on library philosophy is important as an intellectually stimulating exercise in critical thinking, it has no effect upon recruitment of librarians. The best philosophy for a professional staff is a simply worded blue print of daily tasks, different for each library.

MARTIN, LOWELL, 1935:

The misconceptions about library science include the notion of library science as a set of rules, statistics or a belief that it constructs a pattern of theory based on scientific facts of today. Its nature is in its scientific, experimental, inductive method and attitudes of objectivity.

The objectivity differs between natural and social sciences: the former is independent of social conditions, the latter is based on human conditions.

---- 1937:

As a part of social institution, the library transmits cultural heritage with 'social control'. It is 'an expression of its age': educating people for democracy and providing recreation for educated people; it is the agency of a political system founded upon the assumption that enlightened citizens are able to govern themselves. As a product and integrated part of social process, library mission changes with society's needs and values. Major library objective is to provide environment for freedom of opportunities for self-fulfillment.

"The library, with its freedom from restrictive behavior patterns and autonomous formalism, and in its books reflecting the whole play of living, is favorably equipped to assist the realization of personality and the encouragement of self-expression." (p.562)

---- 1948:

"The function of the American public library is to mediate between seekers for knowledge and the recorded materials which contain and promote knowledge." (p.1) Its central mission is to offers adults educational services, by providing (a) information on current issues, (b) material of local interest, and (c) specialized resources.

"In democracy the objectives of educational institutions are limited by the values which the people adopt." (p.12) The objectives of a public library as a community institution, are by necessity selective, relevant to that community.

---- 1968:

In changing technology a distinction is made between the computer uses for (a) bibliographic control, (b) document reproduction and distribution, and (c) information retrieval. The knowledge explosion refers to a utilitarian knowledge, the technical focus is on increased productivity.

Social changes lead toward specialization based on human intellectual power as the major resources. Librarians will have to shift from a focus on resources to people they serve. "In the past librarian's question has been - how can I get the learner to the library? The future question will take the form - how can resources be projected to the learner? " (p.203)

---- 1979:

Although libraries are conditioned by their society, they do not always follow or reflect social changes, they are not "a mirror image of its milieu." (p.269)

Public libraries serve only minority of the population leading to accusation of elitism. In the larger social context, society "sets limits which the agency cannot escape, but within these limits the library takes on a character of its own, responding to some parts of the milieu but not to others." (p.271)

Demographic changes in this country are characterized by population growth and aging, changing roles of women and family, urban concentration and dispersion, the problems of minority and poverty, class structure and changing nature of social research.

In the past libraries did not changed significantly, intensifying rather than diversifying their functions. Today the focus is on internal changes to improve the services to the patrons. "The forces that seem destined to change the library are more technological than social, with modifications in structure and mechanics more likely than in social purpose and wider clientele." (p.293)

MARTIN, WILLIAM J., 1987:

Most of the library knowledge is based on shared experience and practice. Information science "represents a conscious attempt to introduce academic rigor and standardized research methodologies into an area which evolved on a largely ad hoc and pragmatic basis." (p.130)

The author sees the changes in information profession leading to the deprofessionalization of information work, by ceasing to be a purview of a small group of people sharing the same value system.

MARVIN, CAROLYN, 1987:

It is believed that history shifted its focus from exchange of things to the exchange of knowledge. Information age was introduced by economic analysts describing information as the increased productivity of brain work and as a shift of capital and labor from manufacturing to services.

However information quantity is not a measure of meaning; the structural specificity of the economics of information was posed by economist Machlup and since then information age is not considered as a hypothesis but as an established fact of life.

For Porat information is uniform, mechanical in structure, economically quantifiable, with its meaning of no interest to the economists. Yet information does not exist until it has meaning, which is established only in social relationships with cultural reference and value.

Machlup distinguishes between information as 'that which is known', to which price is assigned, and information as 'state of knowing', in someone state of mind. However, information cannot be conceptually framed as a distinct and independent economic category, since no economic activity could take place without suitable information.

Information can be shared or augmented rather than used up, hence if consumption is not entering calculation of information value, the conventional notion of price and cost will be misleading indices of its economic operations and effects.

M.Douglas does not classify information as a separate economic sector, but considers all goods as a part of a more fundamental cultural information system where people seek to bring the variety of meanings that goods express under their control in consumption. Goods are the information system.

In human history information was perceived as part of multiple levels relationships among people. What seems to change from time to time is not the total contribution of information to economic activity, but the forms of energy in which information is captured and exchanged, and the nature of its social classification. The information age is a buzzword, not a description of real phenomena.

MASON, ELLSWORTH, 1975:

The social disintegration that results in indecision is analyzed in terms of a cyclical theory of history.

The entire course of human societies is a graduate shift of authority from the few to the many. It starts with local oligarchy, followed by autocracy of plebeian class, with democracy emerging in the third stage. However, soon individual freewill becomes unguided by values, and self-interest at the expense of general interest thus renewing the chaos.

Chaos is a basic condition of the world. Managing multiplicity of people is a central problem of administration in organizations. Decisions are required in areas where personal expertise is lacking and authority is viewed as a destructive force.

MASON, MARILYN GLEN, 1985:

Plato objected to writing as a new technology which offers information without discourse. Today computer technology is considered in economic or technological terms instead of addressing the issue of related library purpose and value.

The basic purpose of a public library in USA always was to support democracy through public access to information. Its roles are: (1) passive, to "provide the materials, the indexes, the finding mechanisms and control tools . . . for individual to find a book or research an issue." (p.138), (2) active, to provide "answers to questions, not just access to materials containing these answers." (Ibid.), and (3) interactive database search.

"Free access to information is a cornerstone of the library ethics . . . we have a professional and ethical obligation to ask for the resources we need to provide adequate library service to the community we serve." (p.139)

MASON, RICHARD O., 1987:

Information is kinetic (in motion, stimulating the receiver) or potential (at rest, waiting to be released). The task of placing a value on information is to determine both its actual and potential use value. Potential value is an actual value multiplied by probability of being used. Information should be collected and provided anytime since its potential value is greater than its cost of provision.

Value doesn't exist in abstraction, but is realized through means-end process. Four categories of value are: (1) economic (for possessing adequate means), related to efficiency, effectiveness, and responsiveness, (2) scientific (possessing knowledge and understanding relations between means and ends), understanding for its own sake, (3) political (for dealing with cooperation or conflict among involved parties); it increases the power of information recipient, and (4) Esthetic (for creating new or different end).

Relevance is a key factor affecting value and cost of information. It involved information wanted, needed and provided and is further evaluated as not misinterpreted, timely, reliable, valid, adequate and wide ranging.

MASON, ROBERT M., 1985:

Computer learning consists of the ability to recognize a problem that it has solved before, and the capability to select relevant facts. Human knowledge includes in addition to facts also meaning and significance of these facts. Humans can also use common sense (in computers known as nonstandard logic) to change a previous conclusion in light of additional information.

The greatest interest next few years in artificial intelligence will be in (a) expert systems: a computer program that when presented with series of facts, follows a set of rules and reaches conclusions similar to human expertise. It consists of: (1) a database (facts), (2) a knowledge base (e.g., set of rules for comparison and interpretation) and (3) an inference engine, applying the knowledge to act on the situation-specific facts that are fed into a machine. (b) Natural language interface which permits human operators to communicate with computer using human-like language. (c) Visual recognition is of special interest to military and robotic designers.

In the libraries the first computer services were passive (to use static data sources such as book), then database services improved efficiency, in future with information stored in a 'knowledge base' we may be able to anticipate users' interest, thus offering not only interactive but also proactive services

MASSIE, JOSEPH L., 1987:

The concept of management developed in four stages as: (1) administration of people, (2) development of managerial tools and (3) application of economics (Adam Smith's division of labor) leading to (4) Industrial Revolution moving production from home to factory, separated from capital and distinguished between ownership and management, new technology of production, and social reforms aiming at improvement of working conditions.

Management is defined as: (1) a process of groups' accomplishment of common goals through economic resource, and (2) a system of authority. It addresses psychological needs of the client and employee and develops political acceptability.

Management performs the following functions: (1) decision making, (2) determination of the structure of jobs, (3) staffing, (4) planning, (5) controlling, and (6) leadership. Its roles are: (a) informative, (b) entrepreneurial, and (c) interpersonal.

MATTESSICH, Richard, 1982:

"Systems thinking is first and foremost a point of view and a methodology arising out of that view." (p.384)

Systems approach distinguishes between (a) systems philosophy (ontology, epistemology and methodology), (b) system analysis (mathematical theories and systems models), (c) empirical systems research (in behavior, laws and simulation of systems), and (d) systems engineering (artificial systems).

Major contributions include: (a) Bertelanffy's General Systems Theory clarifying and generalizing the organizational systems in society, (b) Bogdanov's concern with organizing and disorganizing systems, their differentiations, growth, duplication, and interdependencies with environment, (c) Ackoff's focus on pragmatic and methodological research, (d) Churchman's focus on the existence of a hierarchy in the system and reconciliations between the goals of super- and sub-systems, interrelating ethics of individual behavior with that of the whole system, (e) Simin's development of scientific basis for system's design and testing, postulating that a person "as a behavioral system, is structured simply, and that his apparent complexity stems from the complexity of his environment." (p.390)

---- 1993:

This essay consists of three sections. The first section discusses the conceptualization of information and knowledge. Topics include similarities and differences between information and energy, their dual character, the meaning of generic, syntactical and semantic information and the distinctions between data, information and knowledge in the process of communication.

The second part of the essay concentrate on the economic of information, knowledge and education, by distinguishing between 'information economics' (as an extension of Decision Theory, Team Theory, Market and Agency Theory) and 'the economics of knowledge and education' (empirical and descriptive nature of the production and distribution of knowledge, the approach pioneered by Machlup).

The final section deals with least researched, issues of the depreciation of information and knowledge, both considered as commodities that in principle can be written off, if their value decline, either in a physical sense (acidity of paper) or as the obsolescence of the content).

MATTHEWS, D.A., 1969:

In response to Foskett's essay on intellectual and social changes in library service, author questions the quality of the librarian's insight into the works of art and humanities. Insight is a rare ability. The author prefers to talk about education of librarians in value judgment through the exercise of discrimination on writings of all kinds. He doubts that it is possible to have "the librarian as some sort of cultural guru in every suburb." (p.93)

MATHEWS, VIRGINIA H., 1981:

Mathews distinguishes between private and public awareness in perception, consciousness, cognizance, alertness and appreciation.

Private awareness includes a sense of mission, "a strong belief in the social, economic and personal utility of reading, of access to information and to help in utilizing it; sensitivity to the hidden needs of people, to their eroded, atrophied or never fully developed sense of competence, identity and self-confidence." (p.42)

Public awareness consists of "real understanding of why reading skills, a high level of literacy, continue to be essential leadership equipment in a society in which precision, and ability to analyze, interpret and extrapolate count [is directed] toward competence and success." (p.43)

Librarians ought to avoid the 'displacive fallacy', the notion that new technology will replace the old, and should adapt to changing roles from motivator to provider and listener.

"Librarians are in the business of bridging the gap between information and its application, of helping people to make the leap from conviction to action, from what they are to what they want to become." (p.44)

MAYER, HENRY, 1974:

"Public policy is concerned with whatever governments choose to do or not to do [it] includes the study of the major barriers and obstacles to the spread and use of information. If we treat information as one more resource necessary for action, then the study of its distribution, accessibility, forms and modes, typical usages and non-usages can be seen as part of the study of public policy." (pp.393-4)

Librarians in their role of the communicators of information to the public at large must become more active and militant in the field of public policy.

McCLELLAN, A.W., 1961:

A distinction is made between (a) the ends of librarianship (as a profession), (b) the ends of individual public library service (each has its own interpretation of its functions), and (c) librarians' own personal ends and values (what is good for us may not be good for others).

"The ends of librarianship are the means by which other means are served . . . the library exists for the public good but in what that good consists is almost everybody's guess." (pp. 235-6)

New class division appears between cultured educated patrons, and mass-pressure anti-culture class. Hence, the mission of a public library is to "serve the library as a biblio-power house, a technical invention significant for humanity as any other; ensure universal accessibility to all records' knowledge and experience, thus preserving them again the effects of conformism and exploitation; and accept responsibility for ensuring classless society in the cultural sense." (p.238)

McCOLVIN, L.R., 1949:

The author stresses function rather than purpose in philosophy of librarianship, which is not to improve patrons' personality, but to provide him with the opportunities for deciding for himself what he considers good.

"The man who puts his religion, his politics before his responsibilities as a librarian, who does not realize that the librarian as librarian can have no religion, no politics, can never be anything but a bad librarian, false to his faith as librarian, neglectful of his true responsibilities. " (p.82)

Four conditions must be achieved by the library: (1) it must be impartial, serving no ulterior objectives, (2) it must be open, accessible and available to all, (3) it must be good to do its job properly as an objective resource of information, and (4) it must encourage people to use its resources and services.

McCONNELL, J. CHRISTOPHER, 1992:

"Librarians lack a clear and philosophically useful definition of librarianship." (p.53) "To define librarianship in a useful way we must first provide a context . . . Aristotle's discussion of the first philosophy and Ortega y Gasset's examination of the social necessity of librarianship offer metaphysically useful observations and arguments with which to approach a definition of librarianship." (Ibid.)

In Aristotle's terms librarian qua librarian "is a quality or an attribute predicated to a more primary substance . . . librarianship does not acquire its fullest meaning until it extends beyond itself, ultimately to that upon which it depends as described by whichever philosophy is found to be most convincing." (pp. 56-57)

Ortega refers to the librarian mission as a choice of an act by an individual, which collectively becomes a professional mission of a necessary action. "What we call librarianship began as a creative act on the part of individuals . . . it was a personal mission, something individual thought it was necessary to do. But gradually it evolved into a professional mission, a duty, an office, something which society viewed as a necessity." (p.59) Social necessities change with time; initially it was a book preserving the wisdom of the ages with a librarian as its keeper.

McCORISON, MARCUS A., 1984:

Bibliographers and historians are closely related professions. "The historian is concerned with the content and the meaning of the evidence, the bibliographer takes the same evidence and looks at it as a vehicle bearing the text, and attempts to interpret how the whole effects the reader's perception of content and meaning. Historians desire an annotated bibliography, that leads them to sources of information, caring little about the physical nature of the source. The bibliographer works toward a physical description of the source, as well as an account of the content [There is a danger] of confusing a descriptive bibliography, in which each like object is compared and each may be treated as a separate entity, with catalogue of collection in which the bibliographer may not have the opportunity to assemble evidence about an example from more than one source - the one at hand. Whatever the situation may be, the bibliographer's task always is to explain in ways appropriate to a printed object some things that will make plain to another inquirer the significance of a particular piece of thought and work. " (p.134)

McCRIMMON, BARBARA, 1975:

In the preface to her compilation, McCrimmon divided the approaches to the philosophy of librarianship into three periods, all expressing basically the same message but each with its own distinctive viewpoint.

(a) Nineteenth century contribution focused on library function as an extension of public education, (Dewey, Dana, Foss) with librarians serving as agents of a book (Bostwick, Putnay, Richardson)

(b) In 1930-1940 the interest was in sociological research, especially research on reading (Danton, Martin, Goldhor), bibliographies and on the content of the book as it affects individual readers' character and society's culture (Sayers, Haines, Butler, Powell).

(c) In 1960s new philosophical approach emerged. Shera concentrated on impact of new technology on libraries, Harlow stressed scientific factors in the philosophy of librarianship; Nitecki developed philosophical analyzes and Marco discussed a humanistic view. Shores and MacLeish presented an idealistic interpretation of graphic expression of knowledge.

Emerging focus in the philosophy of librarianship included: (a) library objectives, purposes and use; (b) aims and obligations of librarianship, (c) professional consciousness, which in turn leads to (d) theoretical foundations divided into three major themes: (1) faith in democracy, (2) appreciation of the power of education, and (3) dedication to general welfare.

The theoretical foundations for librarianship are formulated either as: (1) provision of useful reading material, either informational or recreational, especially in a public library, or (2) a support of personal development of an individual patron through reading. In both cases it is a sociological focus with use of scientific method, conditioned by cultural, political and economic factors.

---- 1994:

The focus of this essay is on the background to the philosophy of librarianship. The historical pattern of library adjustment to social environment is evident in library awareness of its social role, and recent focus on readers' intellectual enrichment through reading.

The library functions evolved from the responsibility for bookkeeping and preservation, through the bibliographic organizing of library collections and administrative management of printed material, to the service orientation and dedication to intellectual freedom.

McCrimmon discusses the philosophy of librarianship in United States in terms of the two major philosophical approaches of Plato and Aristotle.

Plato's idealism of universal concepts and ethical value is reflected in the library viewed as a depository of intellectual aspects of the civilization, and librarianship motivated by the love of books (Butler, Haines, Powell, Richardson and Sayers).

The Aristotelean approach was introduced by the Chicago's Graduate Library School focusing on sociological research and methodology (Shera, Shores).

The dialogue between these two approaches is illustrated by the debate between the idealism and pragmatism of librarianship. Ortega wanted librarians to be controllers of book production, Kaplan saw the similarities between philosophy and librarianship, considering both as metasciences, Wright draws sharp distinction between humanistic character of librarianship and the materialism of science. Nitecki considered library and information science as a metalibrarianship, based on a metaphorical communication model of interaction between a generic book, its content and its interpretation by the receiver, analyzed on the physiological, psychological and philosophical levels.

Other contributions to the philosophy of librarianship included the condemnation of censorship (ALA Bill of Rights), stress on primacy of individual (Broadfield) and a variety of developments in subjects such as classification (Ranganathan), library administration (Naude, Durie, Panizzi, Putnam) professionalism (Dewey), research in and education for librarianship (Foskett, Orr, Botasso) and studies in different types of libraries.

McCRUM, BLANCHE PRICHARD, 1946:

Following Francis Bacon's concept of idols, McCrum identified three idols of librarianship. (1) Idols of the professional librarian's effort to master his machine, (2) low self esteem as 'mere librarians', and (3) idol of bureaucracy based on the rigidity, formality and precedents.

Idol breaking involves changing one's attitude toward the idols, better definition of library performance and improved library education.

McGARRY, KELVIN, J., 1975:

This is a discussion of librarianship in the context of its society's communication system. Aristotle's model of communication is based on the relationships between Speaker - Speech - Audience. Shannon and Weaver model of telecommunication translates 'speaker' into 'source', 'speech' into 'signal' and 'audience' into 'destination' adding 'transmitter' and 'receiver'. Berlo simplified this model by reducing the relationships to Source - Message - Channel - Receiver.

Information is defined as a content that reduces uncertainty or number of possibilities. (1) In Shannon information theory it is a 'signal transmission' measuring channel capacity and uncertainty of choice; (2) in social sciences information is a communication of meaning; (3) in biological sciences it is a content that helps to organize the structure of environment.

The public library is a cybernetic system reacting to the changes in the environment. The librarian is an active partner in the inquiry process. Entropy is represented by unsorted books, reduced by arranging and classifying them. The major problem in communication system is a noise (physical or semantic).

The Epistemological question, 'man puts the code into a machine, who puts the code into man?' is answered by different philosophical interpretations of the code. The following philosophers and philosophical schools are discussed: (a) Plato: (forms-experience as an imperfect representation of an ideal world), (b) Locke: (Mind as tabula rasa), (c) Polanyi: (distinction between public (written) knowing and private, (in our mind) understanding), (d) Popper: (Three interdependent worlds), (e) Snow's concept of two cultures: humanities and technology), (f) physiological view: (brain processes sensory input as symbols), (g) linguistic view: sign and symbols interact with the environment in language, serving as a frame of reference to the mind about experiences, (h) sociological view: reality is a social construct communicated by use of symbols, read differently, accordingly to the roles and functions performed in the society, (i) modern view: man imposes order upon reality, which is a social construct. Brain needs constant sensory input (information) to select and encode it. What we see is determined by the culture; a social consensus is accomplished through communication.

The library contributes to the common pool of communication by performing a role of a link, by developing knowledge about knowledge. It includes: (a) philosophically-epistemological minimum (patron has some knowledge and expects the library system to help him in getting more knowledge),,and (b) sociologically the patron made some choices and satisfies his needs by matching them with the image of someone who can help him.

The library depends (a) on technology (to save time and costs), (b) on behavioral sciences (to understand human behavior) and (c) on the appreciation of critical reading (in order to contribute to the patron's understanding).

Ethics of information involves (a) determination of how much information to release, (b) responsibility of government to educate citizens of their rights, (c) editing of information by media, and (d) criteria used for selecting information.

---- 1981:

The book discusses various relationships between new technology and communication, which create new forms of society.

Wisdom is defined as intellectual perfection, a capacity of knowing and judging rightly. Knowledge refers to the recorded human knowledge.

Librarians have to distinguish between different aspects of knowledge in classifying it. 'To know' may imply knowledge of (a) theoretical causes and principles, (b) a skill, (c) facts, (d) state of mind or (e) set of attitudes.

Overall, there are two opposing views about information. (a) It exists in the structure of material world independent of human perception, and (b) in a nonhuman world something can only become information when acted upon by the concept system of the knower. Both theories satisfy basic psychological needs. Man is a pattern-forming, he classifies his experiences, to find relationships, to generalize and to abstract from these experiences. There is no consensus when information ends and knowledge began; both are embodied in language and involve a conceptual mechanism that is imposed on data.

Information has to be structured and represented in some way (only electric light is pure information, every other medium has another medium inside it). Need is a basic concept in information, it related to the motivation and imply lack of something. Perception can be defined as the organism's maintenance of contact with its environment. Memory is essential for survival. The act of remembering is the interpretive and imaginative reconstruction based on experiences, it appears in a form of an image or language. Mind is constantly trying to find relations between things it experiences, with a Gestalt compulsion to arrange these experiences into patterns.

There is a parallel between perception, memory, knowing and library. Information is taken into system, (library or brain), it is held there in a classified or schematized form, available on request. Limited capacity and use of brain and library selection requires relevance, selectivity and filter that are of fundamental importance in learning and in obeying the principle of economy both in a brain and in a library.

Librarians must be aware of the interrelationships between the social structure of the discipline and information flow.

Recorded information can be analyzed as a structure of related documents, manifested by citations, that vouch for the authority and relevance of the statements and acknowledge the achievements of writers' predecessors.

---- 1983

There is a mismatch in library schools curricula between the phenomena studied and the tools used. It is created by a lack of a consensus on the definition of information, ranging from the notions that (a) information is an element in a choice (G.Miller), (b) a change itself (McKay), or (c) that which transforms structure (Belkin). Definitions of information reflect epistemological standpoints in accordance with one's world view or ideology. (Welisch). On one extreme, information is a part of material world existing independently of us, on another extreme, something becomes information only when acted upon by the concept system of the knower, itself a product of the needs, values and state of knowledge of the community.

There is a close relation between a structure and its supporting environment as evidenced in entropy (without continued input any system will decay).

"Information is now seen by many as a 'commodity' by analogy with the classic resources of land, labour and capital. However, unlike these resources, information is not depleted by wider sharing; indeed the 'commodity' is enlarged and enhanced by commentary and criticism. More fundamental still, information determines how we view and use other resources, and, ultimately, shapes our conception of the objective world. The study of society's information systems is more complex than information science has so far taken it to be." (p.104)

There is a difference between subject knowledge (interpretative and prescriptive) and the bibliographical knowledge (descriptive). McGarry compares the function of a subject specialist to that of a street map of London showing relations between details and the bibliographical system similar to underground map providing simplified relations between distances.

The traditional core, the basic knowledge that distinguishes a librarian from other professionals has been, according to Foskett, cataloging, classification, bibliography and management, while Needham considers people as a core. However, recent technological changes replaced a need to teach detailed author-title cataloging, stressing instead an online databases and indexing techniques.

Important is a balance between teaching social context of librarianship and sociology proper, or psycho-linguistic basis of indexing and the extreme of teaching structuralism.

"Information transfer and storage technology has advanced but indexing techniques have not." (p.116) "The humanistic and cultural problems of the new technology have yet to be tackled." (Ibid.)

---- 1987a:

Information depends on the processes that produce it; this creates the difficulty of defining it; only some of the aspects of information can be studied independently of these processes.

"The anchorage for an information science course (as distinct from librarianship) is based on the premise that information can best be understood in the context of specific system. Since librarianship is a system . . . a subset of information science." (p.156)

The existence of information or its science as an objective reality with its own unique domain is still debatable. "Information science is the study of information-producing processes in any information system in which they may occur . . . while information science may in principle be concerned with the analysis of pure process, it depends primarily on the methodologies for studying phenomena in specific disciplines." (Ibid.)

---- 1987b:

Three kinds of the definition of culture are suggested: (a) humanistic: culture is a pursuit of perfection by knowing all relevant recorded information, (b) cultural anthropological: culture is a particular way of viewing the world, and (c) ethical interpretation of culture as a hierarchy of superiority between cultures.

Both librarian and educator select what shall be transmitted to next generation. But what is better? How to address a need for a balance between different cultural needs and at the same time encourage dynamic pluralism?

According to Skinnerian behaviorism information is independent of cultural variables, an individual is a discrete entity, a unit of production and consumption, a social datum that can be easily computable. This view is not wrong, it is incomplete. Human activities consist of creating and transforming symbols, human meaning is expressed by different symbolic forms such as poetry, or mathematics, each has its own validation, each is not reducible to other forms, and each has its expression in some institutional organization.

The core of both librarianship and information science is the storage and retrieval of information; in both cases words are the carriers, loaded with emotions and attitudes. However, preoccupation with the hardware of information retrieval and storage weakened critical and judgmental part of library education.

McGRATH, WILLIAM C., 1985:

Reflecting on the philosophical meaning of the library collection, the author states that: "without a collection a library is as nothing; it does not exist." (p.242) "The emphasis has shifted to access and that, because of technological advances, good and direct service will be possible and librarians no longer will try to build and maintain large self-sufficient collection. Whether a library or indeed librarianship can function without large collection, however, is not at issue here. Instead, given the basic reality of collections, how can we reconcile them with use and how can we characterize them in a way that the insights obtained would improve the availability, accessibility and ultimately, user satisfaction?" (Ibid.)

---- 1994:

Using the metaphor of Copernican theory as an example, the author discusses the possibility of developing a unified theory of librarianship, by following the explanatory and predictive methodology of modern astronomy.

"In every area -- acquisition, storage, preservation, classification of knowledge, collections, reference work and so on, there is something that varies and is dependent on something else, so that we should be interested in building theories that would enable us to explain and predict the activities of each area." (p.6)

The proposed unified theory of librarianship is based on the integrated system of measurable relationships, regularities and laws between the contribution of publishing, selection practices and acquisition policies, which together with other variables have impact on storage, preservation and classification of collection, thus creating necessary conditions for library circulation.

McHALE, JOHN, 1976:

"It is important to distinguish the difference between information and knowledge. At the simplest, knowledge is ordered information, and there are many levels of such ordering. [Quoting Rudy Bretz] "Information has far less structure than knowledge; much information in fact consists of isolated and unrelated facts. In general, unrelated information can be filed in a human memory only when it has become associated with some prior structure of understanding and has become part of a person's knowledge." (p.4)

McINNIS, RAYMOND G., 1982:

The author provides a structuralist approach to the teaching of library research based on a metaphorical model. The model is based on Pepper's contextual viewpoint.

"Reference librarian works with abstract material called information . . . information consists of ideas . . . created abstractly, contained in physical objects . . . librarianship must be metaphysical rather than scientific (Wright), [and] theoretical framework for librarianship can be based on 'metaphysical models' (Nitecki)." (pp. 54-55)

The author interprets 'bibliographic citation as a symbol for a concept, function as a metaphor for the cognitive content of a specific publication. That is, the relationship between the cited document and the concept it symbolizes is metaphoric." (p.56)

---- 1984:

This is a discussion of the concept of mental, cognitive maps defined as images constructed in our minds to help understand the formats, conventions, processes and formulations of concepts.

McKENNY, MARY and EDITH ERICSON, 1972:

The authors described the 'Creative Experience', a project in a small college library, aimed at participatory democracy, and introduction of 'radical' changes in library operations such as the browsing room dedicated to 'alternative' publications, extended library hours, expanded community service, and revision of LC subject headings.

The experiment failed, in part because of betrayal by radicals, by liberals and by the power structure. "From our point of view," the authors maintained, "radical means making real change, at the heart of things, or wanting to make that change; liberal means being inherently ambivalent about change: i.e., the difference between a liberal and a reactionary is the degree to which the former masks his/her desire to maintain the status quo." (p.96)

The disappointed and bitter, the authors concluded "that the concept of 'intellectual freedom' excuses a 'neutrality' which really supports the Establishment." (p.106)

McMAHON, A.M. and J.TYDEMAN, 1978:

"Library is a system for assembling published materials, developing information services and disseminating information for use by client . . . [Library is] open to environmental influences and includes human interaction in the context of carrying out defined tasks." (p. 905)

Within the system's framework one can understand the nature of library functioning in terms of layers of specificity, by retaining at any time the totality of the library overall mission to deliver information to its patrons.

The insight offered by systems analysis of librarianship is threefold: (1) "Basic mechanism between the primary objectives which are present in any systemic representation of a library determines its basic character; (2) the interaction among the activities demonstrates the function of the library as a system, and (3) the holistic view allows the library to be appreciated as totality and to be compared with reality on this basis," (p.915)

McMULLEN, HAYNES, 1957:

This is a discussion of philosophy of librarianship in terms of its 'backgrounds', i.e., library research, history, bibliography, and relations to society. The following writers on the philosophy of librarianship are cited: (1) Ranganathan (Five laws), (2) Broadfield (focus on individual), (3) Irwin (librarianship as an applied bibliography), (4) Butler (preservation of scholarship), (4) Madden (the role of social preservation of individualism), (5) Garceau (library in political process), (6) McColvin (comparative librarianship), (7) Wilson and Tauber (academic libraries).

The author concludes that philosophy of librarianship can be defined as an expanded research on issues mentioned above, in terms of the validity of data and reasoned conclusions.

MEIJER, J.G., 1991:

The essay focuses on the role of presuppositions in the classification of knowledge in library science. "Prescientific presuppositions arise from the reality view that is influenced by genetic, social, person-structural and religious/ideological factors. Scientific presuppositions consists of metaphysical (ontological and epistemological) premises and paradigms [they] function as points of departure in scientific work [and should be] as far as possible founded metaphysically." (p.217)

MELODY, WILLIAM H., 1986:

"All societies always have been information societies." (p.223) "The social, cultural, political and economic institutions in any society are defined in terms of characteristics of the shared information within and among those institutions." (Ibid.)

Societies differ by kinds of information needed and different technologies used. Market for information determines the amount of information provided by information industry in two ways: (1) available technology increases the amount of information available, (2) many kinds of information, unused before, are now introduced because of their marketability.

"The information acquires value because the decision-making systems in society are being structured so as to depend upon highly-specialised information delivered over complex, high-technology networks. As the dependence become greater, the economic value of the information becomes greater because the opportunity cost for following any alternative path becomes greater." (p.225)

The author compares the roles of the old monks to guard and control the information access with the modern electronic monks' role of not only controlling the access to information but also interpreting information in its context. "The emphasis will shift away from the technology to the information only after society has trained a cadre of new electronic monks who can evaluate user need, demonstrate how they can be best met, and guide the development of the most useful information sources." (p.230)

MENOU, M., 1969:

Informatics was created not by the rapid increase in human knowledge but by a rapid change in the ratio between human mental structure and the scope of challenges created by available knowledge. The long development of human race created emotional and fear barriers for better understanding of science. Knowledge transfer shifts presently from the autoconsumption for individual own survival to a mass production of information as a commodity.

Information exists independently of any documentary translation, yet it is difficult to be separated from its medium. The author distinguishes between three basic kinds of information: (1) primary (raw material or data pertaining to a given viewpoint), (2) secondary information (information about information) and (3) tertiary information (a by-product of the primary information).

Transfer of knowledge is an " operations performed to collect, describe, analyze and synthesize, store, memorize, retrieve and disseminate information under their various forms (primary, secondary, tertiary) by means of available technique." (pp.60-61)

Transfer of knowledge system is the "apparatus which carry out with fixed methods and instruments, a set of fixed procedures corresponding to the main functions of the transfer of knowledge, if not the whole, for a given object or field. Each function (archives, documentation, information) may dispose of a system or subsystem which would be its own." (p.63)

MENZEL, JOHN PAUL, 1972:

The author applied Barfield's epistemological approach to the study of the nature of library science. He questions the empirical approach, proposing instead a transcendental methodology.

Descartes' matter-mind duality is the basis for the contemporary mechanical interpretations in natural sciences and for the approaches in librarianship. It is illustrated by Shera's concept of 'management of knowledge' utilizing a mechanical methodology of the positivistic philosophy.

Barfield opposes materialistic orientation by relying on myth and metaphor that would interrelate poetry, science and religion. "In its origin language is mythic, and for archaic thought knowledge is immediate and external. It is through the application of metaphor that consciousness is expanded and knowledge is internalized. Intellectual consciousness . . . is essentially a dead consciousness. It is epitomized in modern times by the empirical philosophies. Romanticism emerged as an attempt, through imagination, to do consciously what the ancient or pre-logical mind did unconsciously. This is the basis for Barfield's philosophy." (p. 22)

Barfield focuses on the transcendental dimension of philosophy which basically is an intuitive method of knowing, as contrasted with the empirical approach that maintains that the knowledge is obtained from the interpretation of facts of nature only.

Menzel criticizes Goldhor for his, similar to Popper's scientific approach to history, illustrating a positivistic misconstruction of historical approach by using empirical methodology of observable, verifiable and logically accessible facts and events. He also agrees with Shera's notion that librarianship must be based on epistemological analysis.

"However, Shera actually fails to support his [own] position because he does not offer anything, which is really new, to be studied. As a matter of fact, his support for a librarianship that is concerned with the 'management of knowledge' betrays the poverty of his position and a weakness in the field of library science as a whole." (p.43).

"Descartes' Cogito ergo sum was a forthright affirmation that the beginning of all inquiry is epistemology and epistemology is primarily philosophical. Therefore . . . the primary task of library science is purely philosophical." (p.45)

MERIKANGAS, ROBERT J., 1987:

The author describes a model based on a metaphor of mapmaking, i.e., compiling various lists, and bibliographies, which more directly reflect the needs of patrons. The focus is on knowing users information-gathering patterns and needs by being more personal and sensitive in the reference interviews.

Librarians may be considered mapmakers "in two basic and interrelated ways." (p. 301) "We are engaged in mapmaking and map interpreting both in our bibliographic systems and in our personal interaction with users, they are engaged in a truly cybernetic endeavor; as we learn more about our readers' inner maps, and search schemata, we can improve our bibliographic arrangements by making them easier to understand and more flexible in meeting the varied needs of users, and most essentially, also cumulative: we learn to do better and so do the users, because we keep adding to our maps - we grow." (Ibid.)

MERTA, A., 1969:

Informatics is known by many names such as informatology, exagelectics, documentalistic, theory of scientific information, or semantic theory of information. It emerged as a consequence of 'ignorance in consequence of information abundance' which created some 20-30% duplication of research by insufficient information retrieval.

Informatics is a synthetic discipline studying and creating social links and exchange of information. It directly interrelates with mathematics (mathematical logic), linguistics and semiotics (as information retrieval language), cybernetics and mathematical theory of information (determining parameters of the discipline), methods and means of information transmission, reprography (recognition theory), and system engineering (technical issues).

"The object of study of theoretical informatics comprises a single complex of processes, in particular: the process of transformation of new knowledge into information . . . the processes of the origination of all types of information sources, both primary and secondary . . . information communication processes [including] technical equipment, economic patterns and organization of information transmission." (p.35)

METZGER, PHILIP A., 1994:

A book is defined "as a carrier of permanent text meant for distribution. Its physical manifestations vary over time and place and depend on a culture's needs and the technology available to it." (p.81)

The development of the book's physical format is traced to (a) individual, unique clay tablets in Egypt, (b) scrolls, made either of the papyruses or parchment and codices used by Greeks, Romans and Jews, and (c) books printed and recorded on various media, with multiple copies of the same text made since Guttenberg invention.

MICHAELS, CAROLYN D.C.L, 1985:

The major theme of this book is the assumption that "the organization and collections of libraries create the textbook for knowledgeableness and informationability." (p.8)

Critical thinking includes "ability to organize, select, and relate ideas and the ability to distinguish between fact and opinion. (Ibid., p.21) Critical thinking is a pyramid made of facts (at the base of a pyramid), opinion, judgment and value (at the top of the pyramid). Unsupported opinions are like clouds revolving around the pyramid.

Michaels lists three kinds of skills necessary in learning: the ability to (1) cipher, to read, (2) to abstract, analyze, generalize, and (3) to utilize the material received in the brain by means of the other two skills.

The library is defined as "an organized collection of the carriers of knowledge." Organization is "both a way of referring to an ability to locate library materials, and a way to show the interrelationships between them." (p.42) Collection is the basic concept in library work and its professionalism. Carriers define the library's function as a knowledge store-house. Knowledge is the information packaged into higher level of organization.

A library "is a group of things that have been brought together to provide specific knowledge for the use of specific people to serve a specific purpose at a specific point in time." (p.43)

The author discusses three kinds of truth: (1) propositional, ('a statement of a hypothesis followed by the proof of this hypotheses'), (2) existential (Sartre's concept of existential existence), and (3) subjective (Kierkegaard's focus on the subject of truth as an environment of which an individual is a part).

Librarians' role as an educator is defined by the propositional truth of critical thinking and the substance of natural, scientific and technical disciplines. The value concepts emerge from the other two types of truth. "Librarians should provide source material from which human values can grow." (p.275)

MIKAILOW, A.I., 1969:

This is an introduction to a series of essays on informatics, defined as "a discipline that studies general laws and regularities governing the collection, storage, retrieval, and dissemination of scientific information . . . [by] use of data of logic, psychology, neurophysiology, linguistics, cybernetics, semiotics, information theory, mathematical logic, systems engineering, scientology, library science, bibliography, book science, and of a whole complex of technical disciplines associated with machines employed in information activities." (p.3)

Major problem areas include: differentiation and integration of the informatics domain, terminology and definition, theory of information retrieval, relationships between language and retrieval, psychology of scientific creativity, organization, processing and classification of records.

---- 1983:

"The word 'information' can be replaced with other terms like: 'control signal', 'code', 'control action' etc. In these cases, information appears as a necessary component of some control process, its role being completely predetermined by the control tasks." (p.14)

Information and knowledge are not identical. Information is a form of knowledge separated from its producer into a document. "Not every piece of knowledge can be materialized (transformed into information) and not every social structure needs to transform knowledge into information." (p.15)

Information as a signal is studied by cybernetics, information as a knowledge is the subject of information science and semiotics. "The economic effect of information must be measured from the standpoint of prevented losses, rather that of gains." (p.16) We "must find adequate ways to determine whether all parts of an information environment can secure and absorb the socially-required level of information." (Ibid)

MIKAILOW, A.I., A.I. Chernyi and R.S. Gilyarevskii 1969:

Informatics did not emerge in response to the information explosion since the ratio between available books and readers capacity to read them has been similar throughout ages, although the access was selective.

The main reasons were: (a) increased endorsement by society of cooperation between science and technology, (b) increased efficiency of technology, (c) increased need for resources (fiscal and intellectual expenditures), (d) reduced lag between inventions and their applications, and (e) mission-oriented approach.

Subject matter of informatics are the methods and laws related to recording, analytical-synthetic processes, storage, retrieval and dissemination of scientific information activities, rather than the activities themselves.

Informatics is not interested in determining the truth or validity of information, its usefulness, or novelty. The following disciplines are most relevant.

(1) Semiotics, which is a search for common principles in different signs systems, subdivided into: (a) pragmatics (relations of signs to human), (b) semantics (relations of signs to objects), and (c) syntactics (relations of one sign to another).

(2) Psychology, that includes labor and engineering psychology as well as psycholinguistics (creative thinking).

(3) Library Science and Bibliography (their ideological, cultural and educational functions rather than specific services to scientists).

Informatics is a continuation of library and bibliography science but with radically new methods of coordinated indexes, descriptors, information retrieval language and thesauri.

MIKSA, FRANCIS L., 1985:

Machlup's principle objective was to characterize the economic significance of knowledge or information in American society, by suggesting five categories of knowledge: (1) practical, (2) intellectual, (3) pastime, (4) spiritual and (5) unwanted knowledge. These categories offer a framework for the development of the modern library. They become a point of departure for the library historian's description of current librarianship in terms of modes in which knowledge is retrieved and used.

Of the five categories the first three are of interest to the author. Western society must rely on an organized approach to knowledge for practical or instrumental needs; in the past the use of knowledge in that way played a diminutive role for the organizers of public libraries. Practical knowledge becomes an important aspect of librarianship because of the demands for freedom of information and equal access to it. Both, the intellectual knowledge and pastime reading are central to the very concept of librarianship in its educational role and in providing material requested by its patrons.

MILER, GEORGE A., 1967:

This is a discussion of 'the magical number seven, plus or minus two' hypothesis that describes limits of human capacity for processing information.

In the measurement of a memory span a distinction is made between the span of absolute judgment and the span of immediate memory, both impacting on the human ability to process information. "Absolute judgment is limited by the amount of information. Immediate memory is limited by the number of items." (p.36) The magical number seven appears in both situations in a form of seven categories for absolute judgement and the seven digits in the span of immediate memory.

"What about the magical number seven? What about the seven wonders . . . seven sees . . . seven primary colors . . . the seven notes of the musical scale . . . and the seven days of the week?" (p.43) "Perhaps there is something deep and profound behind all these sevens, something just calling out for us to discover it. But I suspect that it is only pernicious, Pythagorean coincidence." (Ibid.)

---- 1983a:

In the past, application of the information theory to experiments in psychology could not accept the view "that people are channels through which information flows into storage or behavior [interest now is] less in measuring channel capacities than in characterizing the processes that limit them." (p.494)

"An interesting question for a theory of semantic information is whether there is an equivalent for the engineer's concept of noise. For example, if a statement can have more than one interpretation and if one meaning is understood by the bearer and another is intended for the speaker, then there is a kind of semantic noise in the communication even though the physical signals might have been transmitted perfectly." (pp. 495-6)

---- 1983b:

Miller discusses briefly different approaches to the relationships between communication and language.

According to Mead' relativistic, empiricistic and environmental view, language developed to meet the needs for communication among members of a group, allowing for abstract thinking, emergence of the concept of the self and of a notion of purposeful behavior. Skinner proposed a strict behavioristic notion of "speech as a chain of conditioned reflexes established by environmentally controlled reinforcements and elicited by the occurrence in the environment of the appropriate discriminative stimuli."(Ibid.)

"An alternative view is that the nature of human language has nothing to do with any need for social communication . . . any complex organism . . . must posses highly developed information-processing capacities in order to survive in an unpredictable environment." (p.319) In this interpretation "language is what it is, not because social interactions are what they are, but because the brain is what it is." (Ibid.)

MILLER, GWENVILLE, 1981:

"Basically, there are two underlying philosophies of librarianship. One is represented by the library which regards its role complete as long as it develops a fine collection of resources, properly organized, expertly catalogued, adequately housed, and attractively presented." (p.81) This is a collection-preservation-oriented storehouse philosophy with no responsibility for encouraging its use.

"Another, and quite different philosophy of librarianship is represented by the library which, assuming excellence of collection development and competency in procedure, places its emphasis upon the patron and his needs [and is] more concerned with the use of resources than with their custody." (Ibid.) This is service--communication oriented philosophy, depending on mutual understanding of spiritual, social and intellectual aspects of the library mission and patrons needs.

"A library can be an asset in theological education if the librarian has a clear vision of the supporting role he plays in research and in the formation of the theologian."(p.82)

MILLER, R.A., 1936:

This view of library philosophy is based on the content of the collection rather than the library itself, the book-mindness rather than library-mindness

There is a danger in starting the philosophy of librarianship with the assumption that the library is the desired end of such a philosophy. Basic is the relationship between the book and the reader, and the library's main purpose is the distribution of books, facilitating mediation between books and readers, not the direct dissemination of ideas. Radio, or motion pictures, both means of communication, are in competition with book and reading, not with a library.

MILLIS, CHARLOTTE, 1970-71:

This is an annotated list of essays addressing the Library-College concept and its issues related to administrative, technical and public services, education, and indirectly, to some philosophical aspects. The compilation includes essays written between 1889 and 1970s, with majority published in 1960s.

Among authors more relevant to this study were: Bergen and Duryea, Knapp, Licklider, Ortega, Shores, R.S.Taylor, and Louis Round Wilson.

MINNESOTA EDUCATIONAL MEDIA ORGANIZATION. Telecommunication Special Interest Division, 1985:

Definition of technology includes but is not limited to computers, telecommunications, cable television, interactive video, films, low power television, satellite communications and microwave communications. With the society changing from industrial to information based, the functions of the school library center are to oversee selection, acquisition, organization of materials, recommendations to teachers, assistance in designing instructional strategies, storing, maintenance and circulation of hardware and provision of instructional programs.

Technology offers means for individualizing the educational process, while the insight into technological operations provides understanding how the technology can be controlled to serve society.

MISER, H.J., 1991:

This essay argues for the philosophy of operational research based on a dictum that the philosophy of science without the history of science is empty, while the history of science without philosophy of science is blind.

MITTAL, R.L., 1969:

"Mahatma Gandhi was a pragmatic democrat . . . for him the compelling implication of education was that knowledge knew no religion, cast, creed, class, race or nationality . . . his conception of library service almost coincided with that of . . . S.R. Ranganathan" (p.121)

In the speech of 21 September 1933 "Gandhi enunciated various principles for the organization and administration of libraries. The gist of these principles is that every individual especially the poor, should be provided with an adequate and standardized library service free of charge." (pp.122 ,123)

MOHAMED, OLI, 1975:

"Librarianship, being interdisciplinary in character, and being devoted to the education of others, has its pedagogical foundations in the theory and structure of knowledge. Hence, the primary orientation of the discipline of library science has to be intimately related to the content, structure, and theory of knowledge, rather than with books and graphic records as physical artifacts." (p.3)

Traditional interpretation of librarianship stresses the secondary nature of the profession, its passive custodial function. The new dynamic role focuses on the primary function in the social milieu, away from the book's physical artifacts.

"The theoretical disciplines are essentially cognitive in nature, devoted primarily to the understanding of basic principles . . . [and] seek to apply known principles from the cognitive fields for the solution of practical problems." (p.8) History illustrates the former, librarianship the latter kind of disciplines. Hence, the structural patterns established by cognitive disciplines can be applied to librarianship as a method of organizing knowledge.

There are two approaches to the interpretation of the dynamics of knowledge structure: one identifying structural patterns in each discipline, and the other discovering relationships between the modes of inquiry or methodology of research and information work.

MOHRHARDT, FOSTER E., 1964:

"The three pioneer librarian-documentalists, Ralph Shaw, Jesse Shera and Mortimer Taube, agree that documentation differs from librarianship in two aspects. It performs library-type functions in greater intensity and with evaluation that requires specialized subject knowledge. Shera adds that it is the intensive bibliographic work which he feels distinguish the activities of a documentalist. Taube stresses the impact of technical report literature as driving force for documentalist. Shaw accepts all of these elements and adds that documentation is concerned with a complete cycle of information activities expanding and rounding out the segments selected by librarianship." (p. 747)

MOIGNE, LE JEAN LOUIS, 1985:

A lack of epistemological foundations in information systems can be overcome by (a) considering information systems as a science of design, (b) replacing classical formal logic by modal and self-referential logic, and by (c) introducing memorization system in the modeling of complex systems functions and their internal transformation "in order to integrate in the modeling process, both the functions (synchronic) and the transformations (diachronic) of organizational information systems." (1985, p.247)

MOLE, ADRIAN, 1979:

The author discusses four theories (ideologies) in librarianship.

(1) The conservative theory maintains that librarians are considered guardians or custodians of knowledge and culture. This is an elitist and old-fashioned theory; with the collapse of the power of landed aristocracy, the consensus on what is the proper culture and knowledge disappeared; both become commodities bought and sold in the 'capitalistic' market-place.

(2) The technocratic theory, popular among librarians, sees libraries as delivery systems and efficient means for satisfying majority of the consumers.

(3) The liberal theory considers libraries as systems that provide commodities designed for an individual patron. Librarians as professionals, are the interpreters of individual

needs, responsible for effective service. This is the need-in-context approach.

(4) The radical theory has two versions: (a) pseudo-radical view is reactionary and anti-intellectual, expecting librarians to replace elite by people's culture that would satisfy people's will. (b) Genuine radical view requires librarians to critically examine social relations in order to help change the society by helping those who attempt to eliminate the capitalistic power that controls lives of individuals. "Principal role of intellectuals is that of generating useful knowledge and elaborating ideologies which will justify or conceal the realities of inequalities and oppression." (p.150)

"Although it is often claimed that libraries should be neutral, this is only possible in a trivial sense. Neutrality means tacit support for the established order." (p.165)

MOLHOLT, PAT, 1987:

History of libraries can be examined from a number of viewpoints reflecting social movements, political influences, economic fluctuations, or technological development.

Importance of libraries is related to (a) its cost: improved technology cheapened the book expanding private libraries, (b) increased publications: they increased the importance of libraries because of a need for organizing expanded recorded knowledge, (c) introduction of computers: it improved processing of library resources and access to them, by changing the focus from the collection's medium, its size, location and format to their subject-based, personalized information content, and (d) the change from data processing to heuristic and complex artificial intelligence (symbolic information processing) imitated activities similar to reference interviews, performed as system analysis.

MOLNAR, PAL, 1968:

A distinction is made between (a) library science (aims, organization and functioning of libraries) and (b) bibliology (general book science technology and its cultural, social, historical, aesthetic, sociological and economic aspects).

In the West focus on profit stresses the efficiency and statistical evaluation of operations. In the socialistic countries bibliological approach emphasizes editing, distribution, influence on reading, and ethical conformity to Marxist principles.

Russian tradition was expressed by Lissovski's argument for bibliology as a universal discipline based on spiritual, cultural and material production of books, while A.A. Sidorov considered library science as a static, archival, and separate discipline, independent of bibliology.

Polish librarianship is rooted in the bibliological tradition. (a) Bibliographers Joachim Lelevel, Karol Estreicher and Kazimierz Piekarski introduced bibliology (ksiegoznawstwo) as culturo-historical-sociological discipline involved in compiling major bibliographies and stressing book influence on culture.

(b) Library scientist Jan Muszkowski provided a bibliological synthesis based on historical and economic factors, with library transmitting and preserving role subordinated to bibliology. Adam Lysakowski distinguished between individual bibliology (description and classification of books) and systematical bibliology (historical, structural and social aspects of books). T. Mikulski traced the genealogy of literary history and bibliology. Stefan Vrtel-Wierczynski investigated the bibliography-bibliology relations and the theory of phenomology and morphology,

(c) Theoretical critics: Wladyslaw Bienkowski rejected bibliology as pseudo-science, and its neutrality; there is no unique 'book in itself' as a subject, detached from its own content. Tadeusz Margul also rejected the theoretical approach to librarianship stressing the importance of the practical and educational role of a library. Karol Glombiowski advocated priority of books over libraries, considering their production, description, distribution, preservation and social utilization. Wladislaw Piasecki opposed the superiority of book stressing the importance of librarianship as a profession taught at the university level.

In East Germany: Adolf von Harnack represented pragmatic approach, while Joris Vorsitius argued for a unifying principle for different kinds of libraries in utilizing library resources for the society's benefit. Horst Kunze focused on a book as instrumental role in the library involvement in the political education.

In Czechoslovakia, (a) Check librarian Jaroslav Drtina rejected historical, formalist, positivist, psychological and experimental sociological approaches in preference for technical aspects and ideological responsibilities of libraries. (b) In Slovakia, A. Banik argued for bibliology as a study of book, considering libraries and bibliology in the context of literary and cultural history. Jozef Spetko maintained that biblilogy is subject of a dichotomy between material and intellectual aspects of the book.

In Yugoslavia, Matko Rojnic was skeptical of library science based on either the knowledge of book or on social and cultural roles of librarians. The libraries perform only an instrumental role in society.

In Rumania, Mircea Tomescu focused on the role of library as social utilization.

In Bulgaria, Todor Borov rejects the concept of library theory because of constantly changing foundations of libraries.

In Hungary, Farkas Gyalui called for recognition of the academic status of librarianship. Pal Gulyas distinguished three parts in the book-knowledge: (1) biblioeconomy (organization and history), (2) bibliology (technology) and (3) bibliography (descriptive and systematic). Ervin Szabo closely related librarianship to the study of books. Geza Sebestyen stressed the importance of both basic and applied research (i.e., theory and its methodology). Mate Kovacs developed a schematic presentation of librarianship based on Marxian principles, integrating book and library culture with their social utilization in the context of real life.

In general "the socialist concept of bibliology is based on the dialectical principle that books and book culture are also subject to the common laws prevailing in nature and society, and that the employment of these laws is likely to promote effective practical activities in these fields." (p.30)

MOLZ, KATHLEEN, 1970:

The author makes a distinction between intellectualism as a content (in a historical and systematic meaning) and intellectualism as a style (reflecting individual sensibility).

There is a subtle transition from education for content to education for conviction, from knowing the right things to feeling the right ways, from a curriculum-oriented content of education to one oriented to sensibility. It is a call for relevance, commitment and belief in the library's social function, as manifested by the social activism of 'we - care' librarians. (p.30)

---- 1979:

Concept of equal education in the United States is a product of 19th century. With the decline of the availability of free land, education rather than property becomes a symbol of economic stability and prosperity, expecting a common school curriculum to eliminate discrepancies, promoting public libraries, and arguing for equal chance for the pursuit of education.

The 1954 Supreme Court's decision to end racial segregation initiated a shift from arguing for a provision of equal education to its effects, questioning the original intend of free school movement. Historical Revisionist claimed that schools were consciously designed by liberal reformers as undemocratic instruments of manipulation and social control, designed to keep poor people in line.

Development of research methodologies analyzing public policy by sociologists and economists, interrelated policy analysis with research, distinguishing between 'discipline research' (academic) and 'policy research' (government initiated).

Policy research is interdisciplinary, future oriented and is conceptualized as a process. Criticism of American public education as a tool of capitalistic exploitation illustrated by the s.c. 'distributive justice' propagated a political agenda that did not contribute to the closing of a gap between rhetoric and reality. The above reasoning had an impact on public libraries, which become a subject to similar revisionistic criticism.

In 1935 there was no political interest in the libraries. the position reflected 'institutional' approach to describe but not explain government activities.

In 1950s behavioral approach focused on analyzing and explaining its operations.

In the 1960s the research was more focused on studying government as a continuous policy making process, to provide decision makers with options in delivering services outside of the institutional framework. Effectiveness of libraries and their priorities in providing financial support was questioned.

In 1970s behavioralists asked the question: 'who is reading what and why', further expanding societal aspects of the library by stressing value judgment, such as cost-benefits, efficiency of operations and effectiveness of a public library in meeting social needs. Most of the library studies were directed at the improvement of library efficiency, not addressing the accountability and distributive policy issues.

Recently attempts were made to introduce 'social indicators' that would measure qualitative aspects of operations. Although social accounting will never be perfect, it can be partly addresses by means of setting measurable goals and objectives, thus responding to the increased social responsiveness of the decade.

MONEY, CHRISTOPHER P., 1984:

This is a review of Adler's definition of philosophy as a discussion of the principles and purposes of human life with a focus on ideas (not people or events).

The six ideas identified by Adler are: truth, goodness, beauty, liberty equality and justice. Every statement of knowledge has two distinct aspects: an objective truth value and subjective psychological persuasiveness; the truth refers to the correspondence between a statement of fact in language and the state of affairs in reality. Beauty refers to the enjoyable and admirable; goodness to the desired but also desirable, liberty or freedom depends upon choosing the desirable goods and justice is contrasted with being unjust.

MONTANELLI, DALE S., 1986:

With the ending of industrial age and beginning of information age, librarians as gatekeepers for information resources should focus their attention to the changing values of their society.

The library goals did not change, what has changed is the environment in which information is being provided: (a) from centralized to decentralized, (b) from managerial to entrepreneurial, (c) from hierarchies to networks, (d) from representative democracy to participatory democracy, and (e) from the extended family to the individual as the basic unit of American society.

These changes will increase emphasis on the individual's need to give and receive information."the more we rely on online databases for storage and retrieval of information, the more librarians will be wanted" (p.39), because of the increased need for one-to-one human interaction.

MONROE, MARGARET E., 1962a:

"While librarianship grew up as an art, today it is developing in a world dominated by science. Within librarianship we are relying less on inspiration and more on investigation -- . . . evaluating by quantitative measurements of the preselective factors rather than by that wonderful thump-in-the-middle when the reader's face lights up with understanding." (p.818) "I am by no means saying that librarianship has rejected inspiration, but rather that we are balancing its rush of power and improvisation with the steady drive and analysis of investigation. Nor do I think we have discontinued the human signs that betoken the achievement of our goal, but instead, with some objectivity, we now attempt to balance that single overwhelming success with a picture of those whose faces alas, did not light up." (Ibid.)

The revised concept of standards was introduced to librarianship in 1950 and 60s. Before then, the standards were based on average library practices. Since then the focus is on the objectives of service, the elements determining it and the processes implementing the standards.

---- 1962b:

Library selection principles are twofold. First, library collections ought to include best expressions of opposite opinions and librarians should encourage a user to consult more than one viewpoint; the collections should be evaluated in terms of their conformity with scientific facts and compatibility with fundamental human values. Second, selections should be drawn from authoritative sources.

The major dilemma is the inability of 'illiterate literate' patrons to judge the validity of expressed opinions. Reader services "has developed one guiding principle for meeting public crisis; the library should make it impossible for adults to miss the socially significant materials of their time, and - as a corollary- the library takes no responsibility for telling people what to think but does take responsibility for proposing what they shall think about." (p.374)

---- 1963:

Library service exists only when there is a demand for it. Librarians provide assistance only to the patrons who want it and help clarify their inexact demands by anticipating them. "The public library is a community service that functions only through meeting demands, and at the same time it is a social institution with particular responsibilities which it can fulfill only as it encourages its public to make increasingly significant demands upon it. It encourages an improved quality of demand through raising public expectation of library service and through simulating public aspiration for knowledge and ideas. The public demand is the seed of intellectual life which the library nourishes and cultivates for the best uses of the individual and for the purposes of society." (p.518)

MOOERS, CALVIN N., 1974:

Shannon discussed the interrelationships between message-code-channel as a signaling process. Seboek focused on the source-destination-designation triad in information exchange. The two triads can be overlaid forming a hexagon: source-channel-destination-codes-designation -message, characterized by Fairthorne as a 'notification, which ' addresses all aspects of transferring the author's message to its recipient, together with the physical, conceptual and logistic issues.

The six-node notification in turn can be analyzed in terms of the twenty different triads: (1) discourse (destination, designation, source), (2) signalling (codes, messages, channels), (3) not named (codes, designations, sources), (4) parking (designations, messages, channels), (5) linguistics (messages, sources, destinations), (6) transmission (sources, channels, codes), (7) not named (channels, destinations, designation), (8) addressing (destination, codes, messages), (9) not named (designations, sources, channels), (10) not named (messages, channels, destinations), (11) not named (sources, destinations, codes), (12) not named (channels, codes, designations), (13) prescription (destination, designation, messages), (14) attribution (codes, messages, sources), (15) reception (channels, destinations, codes), (16) not named (destinations, codes, designations), (17) marking (codes, designations, messages), (18) not named (designations, messages, sources), (19) not named (messages, sources, channels), and (20) routing, delivery (sources, channels, destinations).

"This kind of speculative thinking upon the various kinds and ramifications of analysis . . . suggested by the Notification System Hexagon . . . may possibly stimulate a researcher into looking more deeply into one or other of the triads." (p.193)

MOORE, EVERETT T., 1960:

The author warns against condescending approach in discussing differences between national library systems.

"Neither condescension nor self-deprecation seems helpful in such situations." (p.1531) The "pride we take in our libraries must be tempered with knowledge of how our libraries came about." (Ibid.) We "have inherited the institution of free library service and free access to books." (Ibid.) "Good library does not automatically follow political well-being or prosperity . . . remembering these, one is not inclined to feel superior to others whose libraries have not yet had the opportunities our have had to grow to maturity." (Ibid.)

MORALES. MELVYN. 1985:

The application of applied mathematics and statistics in social sciences lead to the emergence of specific 'metric' fields within various disciplines.

Morales discusses a model of metric disciplines as the relationship between library science (bibliometrics), information science (informetrics) and science of science (scientometrics).

Bibliometrics is a quantitative method used in studying scientific communication processes, by analyzing written records. Informetrics is defined as a mathematical description and analyses of the properties and laws in information science. Scientrometrics extends the notion of the application of quantitative, statistical measurements in information science to other sciences, providing a structure of knowledge in these fields.

Informetrics is important in organizing, developing and improving scientific information activities in a national information system.

MORRISON, ELIZABETH, 1980-81:

This is a discussion of the research methods used in librarianship. (1) Quantitative methods can be aiming at: (a) trend extrapolation (projections of future trends based on unchanged structure), and (b) mathematical modeling (predictions that includes variables by utilizing probability distributions). (2) Qualitative methods include: (a) scenario-writing (narrative of hypothetical future state of affairs) and (b) Delphi method (utilizing a group consensus).

Quantitative methods are most often used to determine changes in structure, qualitative methods concentrate on the possible changes in substance. The values of these methods to librarianship are threefold, they can (1) augment conventional research, (2) stimulate imagination and (3) bridge a gap between research and practice.

"If the research is the advancement of knowledge and knowledge is defined as including truth about what could be (what is technically feasible and logically possible, given certain assumptions) then future research may be legitimized as research." (p.206)

MORTAZAVIAN, HASSAN, 1983a:

The author discusses system-theoretic concepts in terms of system theory and information science. A set is a collection of sense- or thought- objects. Relation is a way of relating the elements or objects of one set to another.

System may be defined as 'an abstract relation between sets of objects', a general notion, independent of particular objects. It can be twofold: (1) constructive (from deterministic to stochastic systems with gradually increasing complexity), and (2) analytical (toward greater abstractions and logical simplicity). The choice between these two approaches is dictated not by subject matter but by the investigator's preference, the purpose of research and state of development in a particular area.

The systems are (a) nonlinear (including more than two variables), (b) continuous (continuously changing vs. discrete, changing only at certain point in time), (c) deterministic (exact knowledge of output is ascertainable from exact knowledge of input) or (d) stochastic (not determined, with future behavior unpredicted).

There are two basic approaches to modeling: (a) theory-dominated based on assumption that laws govern the functioning of system, and (b) the second, data-dominated, assuming that these laws are not known and therefore a model is based on available data. It is important to distinguish between a concrete system and a model representing it, implying one of the two parameters: (a) descriptive with implicit constrains and (b) intrinsic with explicit constrains.

A distinction is made between information (a content), amounts of information (supplied), semantic and nonsemantic (physical) information. The theory of semantic information deals with the meaning of information content, theory of communication is concerned with signal transmission. For engineers the more improbable is an event or a signal, the more information it carries; here 'information' is related to the concept of probability.

Information science is "the assemblage of systematic studies aimed at understanding, interpreting, analyzing, and measuring information; and modeling, organizing, and utilizing the process of transferring information, or more generally, knowledge - be it among humans, humans and machines, or only among machines." (p.542)

An information system in the nonsemantic sense is a special type of relation between input and output. Information science has two basic problems (1) how to analyze and measure information content of a set of data and (2) how to model information system.

"Without adequate information about inputs, outputs, processing, and location of books in a library . . . we cannot develop a model of the operation of a library as a system. The question of what is the minimal information set required to identify the structure and develop a (structural) model of a system is, then, an extremely important but as yet open question. There is . . . no general theory that determines such a . . . minimal information set." (p.544)

---- 1983b:

"Mathematicians were never truly devoted to understanding complexity. They were devoted to the search for truth, generality, and simplicity. System theory, however, deals with complexity [hence there is a need] to develop new types of mathematics." (p.574)

"System theory cannot be applied unless the general setting of a concrete problem is such that the numerical quantities that are put into the dynamics of the model or from which a model is to be constructed are mathematically well defined . . . system theory must be applied mathematically. (p.575)

Philosophy of systems deals with problems centered around the concept of systems, it must be distinguished from system theory, which is the science of systems.

MOSES, JOEL, 1983:

Computer science is "not a physical science. The physical sciences are concerned with discovering the principles of the design of a single system." (p.158) "Computer science deals with principles for creating new, large man-made systems and is not limited to studying computer systems." (Ibid.)

As a branch of engineering, computer science is an abstract engineering independent of a physical world. As a branch of management it is considered abstract management dealing with discrete components (people) and discrete information flow.

Since mathematicians were not interested in issues of efficiency, computer scientists had to develop new mathematics for discrete systems. Major issue in the discrete man-made systems is the control of complexity. The simplicity is achieved by reducing the number of interconnections within the system, using top-down method of breaking each complex problem into fewer components.

"The science underlying computer science has little to do with computers. Rather, it is the systematic study of issues related to the design of discrete, man-made systems." (p.161)

MUKHERJEE, A.K., 1966:

The author focused on two aspects of librarianship: (1) library philosophy that is seen by many in terms of its pragmatism, and (2) history of the library as one of the oldest institution that developed with an emerging culture. The book is basically an anthology, relying heavily on secondary sources.

Mukherjee identified but not resolved conceptual problems of distinguishing between (a) librarianship and library science, and between library science, philosophy of librarianship and art of librarianship.

Discussion of the philosophy of librarianship is based on the following assumptions: (1) librarianship is a social process bound with the life of its community; (2) libraries' social role is to educate, inform and entertain, it provides tools for needed information and knowledge; (3) it focuses on reading, group interest and dependence on community values with an responsibility to contribute to new ideas; (4) the library is necessary component in any philosophy of librarianship and it includes a definition of librarianship, its purpose, goals and a statement describing relations with other disciplines.

Value of philosophy of librarianship is in providing systematic body of general concepts which classify library purposes, validates its approaches, add meaning to a library's technical processes and offers clarity to the claims for professional status of librarians.

The operational philosophy of librarianship reflects the practical side of the field as an art. It includes a notion of validating library technique, considering selection as rejection, classification as a tool for reference, cataloging and classification as finding devices, open access through open stacks as aids to patrons and including a concept of centralized processing and decentralized services.

Professional ethics defines roles of different types of libraries from public to special and offers the creed and code of behavior. It calls for the concept of an ideal librarian based on (a) belief in the value of librarians as keepers of books selected for the furtherance of learning, promotion of society's culture and professional neutrality, (b) opposing dogmatism and (c) supporting freedoms to study, freedom of thoughts, speech, and press, freedom of dissemination of knowledge and of instruction. The library should be perceived as one big reference institution, combining scholarly background of the librarian, with his technical proficiency and broad humanism. Patrons should be educated through reading.

The library role in society is to entertain, educate and inform. The historical trend indicates a growth of nationalism, democratization, increased access to collections, fast expanding technology of processing (automation), improved education for librarianship and emergence of comparative librarianship.

The authors discussed the philosophical contribution to librarianship of A. Broadfield, P. Butler, J.P. Danton, M. Dewey, D.J. Foskett, C.O. Houle, R. Irwin, Ch.B. Joeckel, B. Lanheer, G.R. Lyle, J.Z. Nitecki, and S.R. Ranganathan

MUMFORD, L. QUINCY, 1966:

"Librarianship is a journey, not a destination. One never is a librarian; one is always becoming a librarian. (p.902)

The library profession must develop (a) an incentive to creative thinking, (b) a responsibility for producing leaders, and (c) a philosophy of librarianship, all these requirements are interrelated and time-bound.

Problems that have to be answered prior to the formulation of the philosophy of librarianship are: (a) the relationships of libraries to information centers, (b) the function of the professional librarian, (c) the place of libraries in the nation's educational structure, (d) the definition of libraries' public in an age of mass-produced reading material, (e) the role of the book, and (f) the need for the separate and distinct types of libraries that we know today.

"Only by continually challenging our inherited professional beliefs do we arrive at their real value." (p.906)

MURISON, W.J., 1971:

The first public library in England was established in 1549. Its primary objective, constant throughout history, was and is the enhancement of the individual, and a provision of free opportunity for self-improvement by education or recreation, without imposing any particular viewpoint.

"The fullest and nobles significance of the public library movement will be seen when current social problems are being investigated, alleviated, and overcome by the work of the libraries, when ignorant prejudices are banished in favour of enlightened toleration, when the libraries have stimulated a real desire for learning and are recognized as a universal insurance against ignorance, when the effects of the libraries are felt, directly or indirectly by every member of the community, when the librarian brings to fruition his function of encouraging reading in those who are at present illiterate, and when the purpose of reading has been realized as a means of enjoyment of living and the improvement of mankind." (p.237)

MUSMANN, KLAUS, 1978:

To understand the nature of Post-Industrial society, librarians will have to address the following major issues.

(a) Conflict between the elitist techno-economic structure and the populist culture of the society, the changing role of the individual and the impact of these changes on libraries. The conflict is between bureaucratic and hierarchical technical structure, stressing efficiency and rationality and materialistic, hedonistic, anti-intellectual and anti-rational, self-centered culture.

(b) The meaning and value of the information explosion. Culture becomes visual with individuals preferring to see rather than read, and media becoming the message.

(c) The role of technology as a change agent and its impact on librarianship. The computer technology allows for efficient manipulation of information, shifting the focus of librarians from simple data classification to pattern recognition.

" Our strength for the future lies in the fact that the post-industrial society will be an information-dependent . . . information will assume position of central importance . . . human endeavor will become increasingly dependent upon a theoretical orientation [and] the library will be able to make a necessary evolutionary transformation from a passive information storage center of the printed media to a vitally important information center of knowledge in whatever form. " (pp. 233-4)

- N -

NADER, RALPH, 1974:

"We have to have a philosophy of what libraries mean to the community and we have to centralize that philosophy on the function of providing information service to that community." (p.243)

The public library should be (a) an information center for the community, (b) a place for civic gathering, and (c) be more proficient in public relations.

"One critical need in our society today is information to help people interact with marketplace situations . . . These materials can attract a clientele that views the library as not just a repository of the past but as a living expression of the present and of the civic needs of the community." (p.249)

NAJARIAN, SUZANNE E., 1980:

The psychological studies on memory and learning reveal some principles about human categorizing processes of knowledge. They may be useful in designing library system to provide access to its resources by: (a) familiarizing patrons with the organizational schema used, (b) facilitating the use of search strategy that is similar to the retrieval of items from memory, and (c) considering the amount of information that an individual can handle at any time.

The study provides illustrations of applying particular principles. (a) Some categorizing processes are based on the principle of grouping the concepts by involving superordinate categories for more specific concepts. (b) "Learning of new ideas is facilitated by the availability in cognitive structure of more general concepts that serve to organize or anchor and thus give meaning to the new material." (p. 32) (c) Recall of information can be facilitated by sorting unrelated words into categories; and (d) "Individual will organize material into categories that are progressively differentiated in terms of degree of generality when faced with the task of remembering that material." (p.33)

NARAYANA, S.J., 1984:

"The basis of knowledge is information. Information which is the result of a meaningful response to a stimulus, when correlated, synthesized and stratified during the course of time becomes knowledge. Knowledge applied and tested over a long period of time by a continuous stream of minds resulting in its acceptance as truth, becomes wisdom." (p. 27)

Information must be used to be of value. It is used to support or disprove a theory, describe, predict, modify and translate the existing ideas into a physical format, create, recreate ideas and provide a psychological satisfaction.

Problems in information handling include managing physical records, language barriers, proliferation of publications, uneven quality, currency and privacy of information.

NATIONAL COMMISSION ON LIBRARIES AND INFORMATION SCIENCE: 1974:

"A new philosophy of library and information science is needed, one based on a common sense of direction and purpose, a commitment to national cooperative action, and a consistent program of equalization." (p.14)

Recorded information and knowledge should be treated as a national resource, available to all people. The change should be based on a new philosophy of service, supported by Federal, State and local governments and involving the following basic assumptions. (a) The total national knowledge resource should be developed, strengthened, organized and serve the public interest. (b) It should provide equal access to everybody for personal enrichment and achievement. (c) It should constitute an integral part of the nation-wide network. (d) The philosophy should incorporate rights of authors, publishers and the readers, and (e) provide for protection of privacy and intellectual freedom with maximum political autonomy.

NATOLI, JOSEPH P., 1982:

Librarianship should be considered a human study. "The goal of research in human study is to recreate the human conditions of the object of study in the mind of the reader by utilizing the reader's natural propensity to both experience and understanding. It is not the explanation that is understood - a statement shared via reason - but an experience dwelled upon and brought within one's own body of tacit knowledge." (p.163)

The focus is on tacit not propositional knowledge and on subjective approach expressing consciousness based on a phenomenological viewpoint. Natural sciences' analyzes of the physical world, must be internalized within each individual's own understanding of reality.

"The benefit of a qualitatively oriented descriptive study lie in its capacity to reach people on a human level, to enrich the foundation of all understanding - our tacit understanding." (p.173)

NEENAN, PETER A., 1985:

Adult services are defined as: "the purposive, integrated, controlled exploitation of resources available to the practitioner on behalf of clients and constituents for the purpose of attaining specific, desired, predicted change." (p. 181)

This definition is compatible with the philosophy of librarianship that libraries and their services exist to contribute to the individual and social betterment. As a principle it assists especially the librarians involved in adult services.

NEFF, RAYMOND K., 1985:

The library is defined as the repository, lender, acquirer and borrower of organized information - emphases are on prepackaged information for ready access and delivery to users.

The university computer center supplies combination of machines, procedures, and people to input, manipulate, store, retrieve and display information. The computer does arithmetic by manipulating symbol rather than a machine that does both arithmetical and symbols-manipulation operations, a significant philosophical distinction.

Neff lists a number of similarities between the library and computer center. (a) Library stores packaged information and lends it, computer center stores retrieves and displays information. (b) Library acquires and borrows information material, computer center inputs information; both store, retrieve, input and output information. (c) Libraries use a computer to manipulate information, the computer's manipulation of information in symbolic form is relevant to library operations. The use of common storage of media based on bits and bytes bring the two units together. (d) Libraries provide access to computerized data bases in textual. numerical and graphical formats free of charge; the economies of mass production will lower the cost of computers and will result in no-charge computer services. (e) Information access will be used more, thus accelerating electronic library and will offer 'distributive computing'; both books and computer data will be shared easily among institutions. (f) Sharing of information will increase with development of inter campus networking, and cost-effective storage technology. (g) Libraries and computer centers will use the same devices for archival storage. (h) All information will be storable in a standardized form and retrieved in an infinite variety of forms. (i) Electronically packaged information will be used for reference and browsing, paper information packages will be used for personal reading and study. (j) The computer center provides hardware to individuals and maintains it. The library makes software available together with other formats of information.

"The computerized library of the future will deliver traditional information and package it in unique ways for unique purposes poses." (p.12)

NEILL, SAM, 1971:

McLuhan is criticized as an enemy of books for considering them obsolete. Neill maintains that on the contrary, the format of McLuhan own book mirrors his message, stressing not the content but the form of a book, balancing objectivity and perceptivity of the message.

McLuhan identified different qualities of the media, refusing to take a moral stand on the goodness or badness of the changes. A printed book will move from shelves to information center, acquiring greater circulation and usefulness than ever before.

According to McLuhan, anything that works become obsolete, but it does not signal the disappearance of the book. On the contrary. obsolescence "means that a service has become so pervasive that it permeates every area of a culture like the vernacular itself . . . [it] ensures total acceptance and ever wider use." (p.316)

---- 1973:

"The failure of information scientists to provide solutions to the information problems of ordinary people is a result of their failure to provide results beyond 'low effectiveness' for the specialized users of existing retrieval systems . . . (they) ignore human element." (p.48)

The human factor represents a variation in decision making that affects information retrieval by determining kinds of information needs. Librarians avoided influencing patrons' decision in a name of individuals' freedom and protection of their privacy.

Neill points out that "we are not in the 'data' market. We are in the idea business . . . The librarian can't guarantee satisfaction from reading . . . satisfaction is not in the product, but in the complex results of using the product . . . We are not in the precision business [but] in the thinking business." (pp. 52-53)

---- 1975:

Practice in library school offers aids in instruction. It is similar to laboratory work in natural sciences, not like a drill in clerical routines or training of technical skills.

The role of library school is primarily to produce decision-makers, not competent technicians. Understanding, a result of thought processes, does not need to be practiced.

Learning is based on trial and error approach; errors are discouraged in the library practice although they are often the first steps in the learning process of understanding.

---- 1980:

Neill considers an information package as a mental analog of processes and objects in the real, physical world, used by researchers in their analysis of things and events.

Popper rejects the relationship between mental and a physical event, offering, as an illustration, an analyzation of the hole in a donut; the 'holeness' is what is left after one has eaten the donut. Others consider the donut as essential to understand the hole, for them the mental analog of the hole relates to the physical entity of a donut.

Neill accepts the concept of mental analog, but questions the possibility of constructing an adequate model for the universe of knowledge. In constructing an on-line search strategy for the patron, the librarian is providing a custom-made structure of pertinent knowledge in which the models of knowledge are irrelevant. "Knowledge cannot be structured usefully and, indeed, ought not be structured." (p.376)

---- 1982a:

Information is the content of a message communicated from an author to his readers. Historically, library function was to provide reading material, not information. Now some argue that library is in the business of providing free information.

However, the present focus is on knowledgeable citizens, who are expected to be entertained and informed by the library but not 'knowledged'. Knowledge is acquired by each person individually. The function of the public library is to offer education (knowledge) through reading, helping the patrons to become someone rather than to have something; through reading which provides knowledge about the meaning of life, not mere question - answering information.

---- 1982b:

Socio-demographic nature of library users is stable and no change in the number and type of usages is anticipated, unless non-users change their habits.

Speed of service, important only to some specialists, is a selling point of computerization and it is limited by time needed for referencing the material and reading it.

"System professionals never touch a book or talk to a patron. They have established a hermeneutic relationship with the system machinery . . . The profession will no longer recruit those who want to work with ideas rather than things. It will be a profession of systems managers." (p.307)

---- 1982c:

Brooks attempted to establish a logarithmic law of information based on a philosophical position provided by Karl Popper's concept of three worlds.

Popper's philosophy is relevant to librarianship. His World 3 includes logical contents of books, libraries, and computer memories. It is a world of storage of the objective contents of thoughts, and values considered abstractly; it is a domain of library and information science.

Popper uses the terms 'knowledge' and 'information' interchangeably; he rejects the concept of 'information as hard facts' since human perception is based on prejudicial perceptions. Brookes agrees with Popper; to him knowledge is an interrelated structure of concepts with information considered as a small part of that structure. Librarians use 'knowledge' objectively as it is defined in World 3 and it is similarly to Shera's concept of social epistemology.

"The theoretical development of library and information science lies in the problematics of (1) indexing and classifying the objective knowledge of world 3 and (2) understanding the world 2 processes of human questioning and problem solving." (p.38)

---- 1985a:

The library should be concerned with knowledge rather than information. Information consists of facts only, knowledge is a systematic body of interrelating concepts. Understanding is a three-dimensional cognitive and affective perception of knowledge.

"The library's role is not to teach technical skills or to provide technical information or to provide information per se at all. An emphasis on information . . . endangers the development of a broad view of life." (p.60)

Libraries' goals were and still are book-oriented, promoting the kind of understanding that is possible only from reading books.

---- 1985b:

The ontological conception of Popper's three world consists of the physical world (W1), world of our conscious experiences (W2) and the logical content of human arguments, theories, ideas and productions (W3).

Correspondingly in the library's reference situation: W1 provides hints about the characteristics such as age, appearance, physical location of material. the design of the collection, or keys to it; all helping an interaction between the reference librarian and the patron.

W2 tells about the influence of the inquirer on the librarian, cognitive abilities, communication, perception about libraries' role, the expectations, or intended use of the information or education.

W3 refers to language used in the communication, the meaning of the actual knowledge of the subject-matter and library's collection, or interviewing skill of the librarian.

Popper's ontology should be used in the theory of librarianship for three reasons: (1) it helps understand the elements involved in information work, (2) all factors are researchable and (3) three-world ontology may offer a valid philosophical foundation for librarianship, although some philosophers questioned the validity of W3.

Popper's model is about problem-solving, it offers opportunity to develop a theory "of the reference process and at the same time a philosophy of reference work." (p.318)

---- 1987a:

The author addresses confusion in the use of terms 'information science.' To be an information scientist one must study and do research in either: (1) information; (2) information production; (3) information control; (4) information storage; (5) information retrieval; or (6) information use. Distinction should be made between 'science' as 'the study of' and as 'knowledge of' phenomena.

---- 1987b:

Brenda Dervin's and Karl Popper's interpretations of subjectivity and objectivity in information take different approaches, yet both agree on the subjective nature of information.

Dervin model of information is similar to that of Pepper's Worlds 1, 2 and 3. It consists of: Information 1 (information describing reality), Information 2 (individuals' mental image of reality) and Information 3 (subjective perception of reality based on the behavior that selects information)

The differences between the two models "lies in the nature of the problem - the one aiming for scientific, impartial objectivity, the other being personal and emotion-laden." (p.203)

---- 1988:

In spite of the anti-censorship policy, libraries reject materials, if their content conflict with moral standards of the community. The public expects the librarian to be a 'censor.'

An argument against an unqualified policy of intellectual freedom--is fourfold: (1) historical purpose of a public library is to select material to enrich and improve community life; (2) librarians must make selections; (3) societies have values that cannot be ignored, requiring librarians to make a value judgment; and (4) different types of libraries have different responsibilities.

The philosophy behind the above argument is that "racists, sexists and other exploitative views in print . . . [are] essentially dehumanizing - the consequence being a reduction of possible freedom." (p.36)

Common values are essential in the community life; value judgments reflect community mores and are right for that community. The problems are created by extreme views, which call for censorship to protect the community consensus.

Librarians are responsible for both, the preservation of material relevant to research and for the selection (i.e., censorship) of material of interest to the community they serve. The conflict arises when the community standards contain prejudices. The decision when to take a stand on an individual item must be left to the individual librarian in the local community. He in turn must be more discriminating, and he must be prepared to take the consequences of deciding against community prejudicial standards.

NELL, V. 1988:

In reading process a person extracts meaning from a recorded message. The process is culturally determined and requires full attention, while meaning in other media, such as TV is provided as 'ready-made'.

The author discusses three major schools of literary criticism distinguished by focusing on different component of reading processes. (1) The Geneva School focus on writer's work in which reader recreates authors' creative experiences; (2) School of Practical Criticism stresses the text, without reference to authors' purpose. (3) The New Reader School holds that the reader's expectations create the quality of literariness in the text. The reader is not responding to the meaning of the text, but that the response is the meaning (i.e., the book is created by the reader, and the reader makes the literature).

Both public librarians and newspaper editors consider themselves informers and educators, although they are in fact entertainers. Librarians deal almost exclusively with books and reading. They determine the buying policy, thus determining what library user can read.

Social responsibility of the librarian was interpreted by many as serving the pubic, not to give it what it wanted. Some librarians used popular reading as a bait, hoping that readers will change to serious reading. This creates a problem of making distinction between socially valued and not valued books.

Social value judgments made by librarians in selecting books bear directly on the reader's choice of reading material. The selection procedure should be based on a resolution of a conflict between personal preference and social conscience. Taste is not universal, the mass audience is divided into separate taste cultures, each responding to its own cultural values. Librarians qua librarians are trained to transmit social judgments, but not to make it.

NEUFELD, M. LYNNE, 1982:

The term 'environmental information services' refers to secondary services such as abstracting and indexing. Their development is related to the three modes of scientific and technical information transfer: disciplinary-oriented, mission-oriented and problem-oriented.

Disciplinary-oriented information transfer started at the end of 19th century focusing on the fulfillment of discipline-based information needs. In this mode of transfer the users and producers of information are the same, creating a selective technical group of highly competent experts. The focus here is on the access to the total universe of knowledge, including availability of research done, provided by print media. The goal is the education of future academic users. Service is free to its users.

Mission-oriented information transfer began around 1919; it aimed at satisfying specific goals, frequently defined by the projects established to meet these goals. The approach focused on the state-of-the-art information. The users of this kind of information transfer are engineers and technologists, including some nontechnically trained users. The needs of this group are more interdisciplinary, requiring rapid retrieval of printed issue oriented reports, prompting reorganization of present information services, with special concentration on secondary services. The information has an immediate economic value requiring market-oriented information transfer mechanisms.

Problem-oriented information transfer started in late 1960s. In this mode attention was shifted from technological to social issues such as energy, environment and public health. This group includes a large number of nontechnical professionals. The need for information is widespread and interdisciplinary, requiring rapid retrieval, repackaging of recent information and application of the new technology.

NEUSTADT, RICHARD M., 1981:

The first revolution in information technology was the invention of writing, the second was the introduction of movable type, and the third began 100 years ago with the introduction of electronics.

The last revolution affected information by diversifying media, increasing access to variety of information that is community focused and retrieved quickly. Among the problems created by this revolution are the issues of personal privacy, increased costs and reduced availability of free or government subsidized services; and since much of the important information will not be printed, access to it will be limited to the owners of computers.

The challenge to librarians is to establish networks open to everyone in the community "to develop outreach programs to serve our most pressing public needs: information to help people conserve energy, spend money wisely, and find jobs." (p.1376)

NEWELL, ALLEN, 1983:

Intellectual issues are created by complexity of scientific believes. They polarize intellectual communities, often as dichotomies, and reflect the ways people formulate important controversies.

Newell groups intellectual issues into a number of distinct categories, and identifies their impact on the development of Artificial Intelligence (AI).

(1) The Mechanism versus Teleology (1640-1945): issue of purpose in mechanisms links means with ends. The Mechanism precedes a purpose (e.g., Cartesian split between mind and body); in 1940s cybernetics focused on issues related to machine feedback; in 1950s it concentrated on the study of intelligence in solving problems. (AI settled with cybernetics.)

(2) Natural Biology versus Vitalism (1800-1920): uniqueness of living organisms is reflected in the nature of human mind. The issue of relationships between living organisms with special status and inanimate physical objects was resolved by considering organic matter just as a kind of matter different from inorganic. (AI viewed establishment of body as machine.)

(3) Reason versus Emotion and Feelings (1870- ): cold logic of machines was separated from human reasoning; a machine does not have independently felt emotions. Since 1970 an argument was made that the performance functions, but not the sentient (feelings) functions, can be mechanized. (In AI machines was separated from men, and since 1970 AI was disassociated from philosophy of mind.)

(4) Philosophy versus The Science of Mind (1870-1910): philosophy was separated from empirical science. (in AI psychology was disassociated from philosophy.)

(5) Logic versus Psychology (1910-1945): Symbolic logic as an expression of the process of thinking was changed into a device for mathematics. In AI and technology, the role of logic become means for manipulating things by describing sequential and combinational logical circuits. (In AI logic is separated from psychology.)

(6) Analog versus Digital (1940-1970: distinction was made between continuous physical variables (analog) and discrete states (digital). An analog computer represented quantities by continuous physical variables (fast but of limited accuracy). Digital computers represented quantities by discrete states

(slow but accurate). In contemporary hybrid computers digital control and memory is coupled with analog speed and convenience. (AI become a part of computer science.)

(7) Symbols versus Numbers (1955-1965): Digital computers were considered as machines that manipulate numbers; AI considered computers as manipulating symbols. (e.g., in translations). (AI isolated itself within computer science.)

(8) Symbolic versus Continuous Systems (1955 - ): continuous systems in pattern recognition (cybernetics and engineering) were contrasted with symbolic programming systems (artificial community and computer science departments). (AI separated itself from cybernetics.)

(9) Problem-solving versus Recognition (1955-1965): pattern-recognition approach introduced the problems of intelligence (learning), the problem-solving stressed symbolic systems in a machine's game-playing, theorem-proving and puzzle-solving. Since 1965 recognition becomes the description rather than just an identification of an object. (AI separated itself from pattern recognition, in 1965-1975 recognition rejoins AI via robotics; and since 1980 robotics joined AI.)

(10) Psychology versus Neurophysiology (1955-1965): The distinction was made between the psychological focus on symbolic system and problem solving (e.g., stimulus/response) and neurophysiological interest in continuous systems and pattern recognition. (AI was split from cybernetics, establishing a new link to neuroscience since 1975.)

(11) Performance versus Learning (1955-1965): AI created performance systems requiring intelligence; cybernetics and pattern-recognition research concentrated on creating systems that are learned. (in AI resurgence of production system.)

(12) Serial versus Parallel (1955-1965): symbolic-performance system was contrasted with pattern-recognition and self-organizing systems. (AI coordinated these issues with new interest in neural systems.)

(13) Heuristic versus Algorithms (1955-1965): approximate approach based on partial knowledge in search for solution was compared with precise algorithmic methodology. (AI considered separate from computer science.)

(14) Interpretation versus Compilation (1955-1985): efficiency of list-processing language and flexibility of use of compilers becomes an issue. (AI separated from computer science.)

(15) Simulation versus Engineering Analysis (1955- ): simulating human intelligence contrasted with engineering analysis. (AI is divided.)

(16) Replacing versus Helping Human (1960- ): the focus is on ethical issue of replacing or augmenting human aspects. (AI is isolated.)

(17) Epistemology versus Heuristics (1960- ): distinction is made between the nature of knowledge (epistemological) and the process of implementing it (heuristic). (AI is divided and connected with philosophy.)

(18) Search versus knowledge (1965-1980): the heuristic search for the knowledge needed as parts of intelligence contrasted

with highly specialized knowledge (expertise). (Apparent paradigm shifts within AI.)

(19) Power versus Generality (1965-1975): shift in the goals of research from machine-power to understanding of commonsense reasoning. (Shift of interest in AI.)

(20) Competence versus Performance (1965- ): linguistic competence (grammar) vs. actual performance (affected by cognitive limitation or stress of the communicator). (Linguistics is separated from AI and psychology.)

(21) Memory versus Processing (1965-1975): symbolic level of AI vs. psychological architecture based on memory. (Cognitive psychology was separated from AI.)

(22) Syntax versus Semantics (1965-1975): the initial separation of syntax and semantics in the actual processing of language was abolished. (Linguistics is split from AI.)

(23) Theorem-proving versus Problem-solving (1965- ): theorem-proving tasks become a fundamental category with its own methodology distinct from other problem-solving methods. (AI is divided.)

(24) Engineering versus Science (1965- ): Computer science as an engineering method creates various artifacts, it can be also considered a unique part of an intellectual domain of mathematics. (AI divided computer science.)

(25) Language versus Tasks (1970-1980): resulted in a separation of a natural-language processing from task-posed programing. (in AI natural language becomes central.)

(26) Procedural versus Declarative Representation (1970-1980): Knowledge should be coded in procedural encoding information about the tasks in procedures and in declarative (clauses in resolution) representation. (AI shifted from theorem-proving, and appearance of PROLOG.)

(27) Frames versus Atoms (1970-1980): Representation of knowledge was made in frames (substantial collections of integrated knowledge) rather than in small atoms of fragments. (AI shifted to holistic representations.)

28) Toy versus Tasks (1975- ): reflects the tension between basic and applied research, toy and real tasks, and irrelevant and relevant basic science. (AI focuses on applications.) (See Table 1, p.191 and detailed descriptions that followed.)

Not yet raised in these discussions were the issues of the ethical use of technology and dehumanization of people by reducing them to a mechanism. In summary intellectual issues are generalized motivators for action as organizing principles.

NEWHOUSE, R.C., 1988:

Information transfer process includes (a) paradigms' identification, (b) creation and production of knowledge, (c) dissemination and diffusion of information, and (d) organization and preservation of knowledge.

Diffusion is the transmission of information from one culture to another; information dissemination is an act of distributing pieces of information. Primary factors influencing the diffusion of knowledge into social system are:

(1) The source of information, its credibility, trustworthiness and attractiveness: (a) Opinions are influenced by expert and trustworthy sources; (b) trustworthiness is increased if self-interest is eliminated and if communication is not perceived as deliberately attempting to influence the opinions; (c) influence is more powerful if sources are identified; and (d) attractiveness of the source increases its influence.

(2) Nature of the communication itself: (a) other things being equal, an emotional message will be more acceptable than a logical message; (b) Intelligence of the audience determines whether one or two-sided argument is more persuasive; (c) in the order of presentation the time is a key factor, and retention increases with recency of the message; (d) larger the discrepancy between knowledge and the position of an institution, more discomfort it creates which affects acceptance, change or rejection of the information as not credible.

(3) Unintentional social factors include: (a) mere exposure to the action of others, (b) social facilitation created by the presence of other people, (c) deindividualisation, which is a reduction of restraints against antisocial actions resulting in feelings of anonymity.

NICKERSON, RAYMOND S. 1981:

"At least one purpose of written or spoken communication is the transmission of information - the conveying of ideas - from one mind to another. The key question that needs to be answered . . . has to do with relationships between ideas and the symbol systems used to represent them." (p.277) "How is it that an idea gets translated into a structured sound wave or pattern of marks on paper, and, conversely, how is it that such patterns get translated back into ideas? One might define degree of comprehension as the degree to which the ideas that the pattern of sound or marks evokes in the mind of the listener or reader correspond to those that existed in the mind of the speaker or writer who produced those patterns." (Ibid.)

Nitecki, ANDRE, 1988:

Classification systems are divided into bibliothecal, bibliographical and cognitive functions. Bibliothecal function addresses physical location of items within a library, its efficiency and effectiveness are determined by (1) diversity of type of material in the collection, its size and the users profile, and (2) flexibility of the physical library environment.

Bibliographical function organizes recorded knowledge and information within the containers of the records (documents), and its usefulness to the users of the system is determined by their familiarity with the subject, their needs and educational background.

Cognitive function concentrates on the identity of the items defined in terms of their interrelationships with other items, and on the relevance of the bibliographic description in retrieval processes.

The author maintains that no classification can incorporate all the three functions, but should combine at least two of them, in order to improve the overall organization, access and retrieval of the records. .

NITECKI, DANUTA A., 1993:

Using the qualitative methodology, the author analyzed library-related metaphors used by faculty, administrators and librarians in their letters about library problems, published in The Chronicle of Higher Education. Information systems can be evaluated in terms of content-driven, technology driven and Taylor's user-driven models. D. Nitecki's essay is based on the last model, stressing the importance of the user's evaluation of the information system and on Dervin qualitative methodology evaluating information systems in terms of user's perspectives (a 'sense-making' metaphorical model).

Accordingly, value judgments of information transfer is based not on value inherent in the message but is expressed by the receiver based on his perceived potential value determined by the information needs and environment in which the message is received.

In general, metaphors describe perceived problems in terms of the conceptual model held about the problem-related environment. Metaphors used in the letters to the editor describe the perceptions of their writers about library problems and expected solutions based on their own conceptual models of libraries.

To administrators libraries are the contributors to the social structure of the community; to faculty libraries are the depositories of research information resources supporting their own research and librarians see the library as a storehouse playing an active role in the environment.

NITECKI, JOSEPH Z., 1959:

Meaning of the several ultimate value concepts in ethical theories is compatible with the root-metaphors of the corresponding metaphysical hypothesis. Different definitions of 'good' in ethics are the consequences of different metaphysical assumptions of a relevant world hypothesis. This ethical relativism is relevant to the argument for intellectual freedom. A comparison is made between Pepper's world hypothesis (Formism, Mechanism, Contextualism and Organicism) and the ethical theories (Intuitivism, Empiricism, Emotivism and Informalism), interrelated by the root metaphors of similarity, machine, duration of a historical event and its integration.

It is concluded, that since ethical theories are compatible only with a corresponding world hypothesis, there can be no one universal definition of the ethical concept 'good.'

A modified version of Pepper's world hypothesis is interrelated with the theory of metalibrarianship in later essays.

---- 1963:

The significance of the concept of public interest in the philosophy of librarianship is discussed in terms of theories of public interest from procedural, conceptual and contextual vantage points.

--- 1964:

This is a revised and abbreviated version of the model developed in the 1963 essay, describing public interests' semantical relationships in the theory of librarianship.

---- 1968a:

The subject matter of library science is defined in terms of interrelationships between primary terms: a carrier of information, its content and receiver. Knowledge in librarianship is viewed as relations known between these primary terms, studied at the procedural, conceptual and contextual levels.

---- 1968b:

A practical application of the three-dimensional approach to the organization of the library card catalog is implied in the introduction of a three-dimensional catalog. Author and subject entries bring together related works; the author's arrangement provides a horizontal (alphabetic, procedural) listing of the writers, while subject listing offers a vertical, topical arrangement (contextual content) On the other hand, the title arrangement brings a unique feature of each work (conceptual title).

---- 1968c:

A response to Fairthorne's criticism of Nitecki's use of one triad in his model, rather than Fairthorne's twenty. The two models differ in approaches: Fairthorne proposes a mathematical model free of semantical and epistemological implications in information flow; Nitecki developed a philosophical synthesis, a macroscopic overview including in addition to information flow, other library functions.

Fairthorne acknowledges the three distinctive approaches to librarianship (resembling Weaver's technical, semantic and effectiveness levels), and places his Morphology model in one of them; Nitecki considers all three perspectives and interrelationships between them.

---- 1970:

This essay focuses on the description of a conceptual model of librarianship. Library system is defined in terms of logical relationships between (a) basic terms (carriers, their contents and receivers), (b) their constituents (need, goals, means, and their fulfillment) and (c) the attributes (efficiency, satisfaction, and disparity between goals and their accomplishment).

Three basic laws governing these relations are defined (laws of structure, operational and valuation), and a pattern of changing concepts is described by analogy with the general systems theory.

---- 1975:

A survey of various subjects covered by the library schools curricula indicated that philosophy of librarianship was not thought as a separate subject. It may be incorporated in general introductory historical and in courses like 'Communication of Knowledge and Ideas' or 'Library as a Social Organization.'

---- 1979a:

Metaphorical approach offers an insight into symbolic relations between conceptual vehicles, their meaning and interpretation. It provides a root-metaphor explaining a metaphysical nature of librarianship. Library science is interpreted metaphorically as a discipline uncommitted to any particular viewpoint. Based on ethical relativism, it is dedicated to intellectual freedom, it implies an open-end theory of knowledge and offers an orderly, logically consistent theory. The model is hospitable to any viewpoint.

---- 1979b:

It is suggested that the transmittal of orderly thoughts or information in a library situation differ from a conventional communication pattern. The major, easily recognizable characteristics of library discourse are reviewed, and models describing the actual, possible and necessary modes of library communication are proposed. The resulting threefold modality of a library discourse interrelates the physical, objective reality of the message communicated through its carrier, with the conceptual and subjective reality as it is perceived by the recipient of that message.

---- 1980a:

The emerging concept of metalibrarianship is applied to the theory of management in librarianship by offering a model illustrating the three-dimensional nature of library administration, encompassing the procedural-technical, the contextual- service oriented. and the conceptual-theoretical levels of librarianship. The conceptual management is distinguished from the traditional pragmatic definitions.

---- 1980b:

The term 'metalibrarianship' is defined as a set of concepts that interrelates users' needs for information with the means available for obtaining that information. It focuses on primary concepts, not their specific properties. The philosophical framework of the model is based on S. Pepper's theory about philosophy interpreted in terms of the world hypothesis.

Metalibrary discourse is about metaphorical relationships between the descriptions of some aspects of reality, recorded physically in the carriers of information, and that reality's perception in the minds of their interpreters. Its Sociological Realism's viewpoint is illustrated by librarians involvement in the affairs of its community. As brokers, they mediate between conflicting demands on the library by reconciling conflicting group interests.

Metalibrary metaphors interpret the constantly changing relations between given and newly perceived dimensions of knowledge by assisting patrons in discovering concepts new to them, and by providing necessary resources for expanding users' understanding of the concepts they already discovered.

---- 1983a:

Hypocrisy is defined as an intentionally deceptive interpretation of ethical principles of librarianship that interfere with the primary library mission to provide objective dissemination of knowledge. (It can be perceived as one of the 'noises' in the theory of librarianship). Predicament lies in the fact that although undesirable, hypocrisy cannot be easily eradicated.

---- 1983b:

The ghost syndrome in librarianship is manifested in the belief that computers or any other changes in library technology will drastically change the library primary mission to acquire, organize, preserve and serve available resources. The syndrome is also expressed in the confusion between metaphorically described information and knowledge, mind and computer and their real nature. They are not and will never be parts of the same logical category.

---- 1984a:

The essay discusses the relationships between staff morale and morale-related decisions in terms of procedures and policies regulating library activities (procedural), the principles guiding its operations (conceptual) and the actual interplay of these factors in library practice (contextual, environmental)

---- 1984b:

The austerity in library management is analyzed in terms of its impact on library policies (conceptual), services (contextual) and processes (procedural). A distinction is made between right and good managerial decisions. Right decisions maximize needed services and minimize the value loss that must be surrendered in the change. Good decisions are direct and unhypocritical. The former is ends-oriented, the latter means-justified.

---- 1984c:

It is suggested that information and knowledge are different stages of the same continuous process, in which an individual integrates newly perceived data into the already existing system of knowledge already known, linking together data previously comprehended, and thus expanding the scope of that person's understanding. A model is proposed that illustrates the empirical, rational and behavioral aspects of the data-information-knowledge continuum.

---- 1986:

There are three general kinds of reading: for entertainment (subjective), information (data gathering) or exploratory (creative personal interpretation of knowledge contained in the reading material). The activities involved in each of these reading can focus on the study of (a) reading processes (physiological and psychological science of reading), (b) reading context (sociology of reading environment) and (c) reading content (thinking processes of the readers).

Interpretation of the text's meaning by readers is a domain of philosophical speculation about subjective relations between the meaning of the text and its effectiveness in communicating that meaning to the reader. Meaning is a metaphorical concept, a composite image in the reader's mind of various associations between signs, words and thoughts. Reading contributes to the definition of reality as a subjective image of the world projected by the reader through the filters of social and cultural value systems.

---- 1987a:

Common sense reflects metaphorically an initial recognition of simple elements in an often problem-intensive and complex situation. It can be examined from three different viewpoints. (a) A common sense conceptual generalization (constructing metaphorical predicates like 'naturalness' in seeing things as they appear on the surface); (b) common sense contextual tradition (cultural endorsement of communal past experiences);

and (c) common sense processes (verifiable, pragmatically analyzed past and present actions). Together the three-dimensionality of the common sense concept emerges as conventional wisdom.

---- 1987b:

Personal knowledge of reality is subjective. The product of that knowledge is an aggregate of meaningful relations, organized into systems and recorded in carriers of information. The essence of metalibrarianship is expressed in the intellectual environment. Its model rests on a metaphorical synthesis relating physical matter with psychological ideas into three-dimensional aspects of reality as expressed in library collections of records (the intellectual environment). by juxtaposing the physiological matter-related dimension of library collections (their records) with the physiological dimension of the collection's content (as perceived by individual library user), and the philosophical dimension translating collection's content into particular library users interpretation of reality.

---- 1988a:

Intellectual environment is viewed as a process allowing an individual to integrate his or her various perceptions of reality into integrated total personal knowledge.

Reality is discussed in terms of its three-dimensional environment. (a) The physiological dimension provides an intellectual stimulation either external to the individual, or internal within an individual's past experiences. (b) The psychological dimension refers to the unique patron's reactions to physical or mental stimulations and its retention in the memory. (c) The philosophical dimension consists of conscious awareness of intellectual experiences by relating individual's past knowledge of reality to the new experience.

In the library model physiological dimension of reality is illustrated by the technical processes of acquiring, selecting and disseminating information records. The psychological dimension relates to the unique responses of patrons to library collections. The rational, analytical interpretation of relationships between stimuli and responses describes the philosophical dimension of reality.

The model implies that there is no one preferred way of interpreting reality and that neither librarianship nor information science alone is preconditions for a configurational (metalibrary) analysis of a constantly changing scope of information transfer.

---- 1988b:

One of the goals of this survey was to determining a degree of a consensus on a domain of information science by the faculty involved in the development of a doctoral program in information science in one library school.

The results of the study indicated a lack of agreement on the definition of information and information science, and a degree of divergence reflecting the specific views of the disciplines represented by the participants in the survey.

Definitions of information science were grouped into three clusters reflecting different perspectives. (1) Cognitive perspective encompassed in the definitions of artificial intelligence, semiotics/linguistics, psychology, neuroscience, philosophy and anthropology. (2) Socio-technological perspective included computer science, information and library sciences, information aspects in communication science, management science, economic and sociology. (3) Systems perspective incorporated information theory, cybernetiics and system theory.

The above variations in the definition of the domain of information science confirm the notion that information science is a megadiscipline, requiring an all-inclusive model.

---- 1990:

In his survey the faculty members of the American library and information science schools were asked to rank the relative importance of various topics in a hypothetical introductory course to the field. The questions were arranged in three groups reflecting major perspectives.

The conceptual cluster included the discussions of the essence of the field, its philosophy and theory. The procedural cluster related to the informational content of the field, its sources and services. The contextual cluster listed the environment, interdisciplinarity of the field and its professional aspects.

The results of the survey confirmed a lack of a consensus on the composition of the introductory course. The highest level of agreement was expressed by about 70% of respondents selecting one topic as high priority. The rating of the majority of topics asked in the questionnaire was scattered throughout the whole range of priorities.

Librarianship and information science are clearly disciplines in transition, with many claims made on their territory, but as yet very few attempts developed to interpret the discipline in terms of its heritage of selecting, organizing and facilitating the use of the society's cultural records. After all, the consensus is not imposed or planned, it emerges from the discipline's philosophical maturation.

----1994:

The study of metalibrarianship is presented in three parts. First part provides a historical background for the intellectual development of librarianship. In the second part the nature of philosophical inquiry is discussed. The last part outlines an intellectual environment, redefines the concept of information, proposes a model of metalibrary system and reviews its applications in library practice.

Metalibrarianship is here defined as a philosophical framework for a variety of approaches to recorded knowledge. It is an open system, addressing metaphysical essence, epistemological nature and ethical values and purposes of information agencies.

Metaphysical essence relates to the basic relationships between recorded concepts and their cognition. The epistemological nature of relations describes the process of balancing the empirical tendencies of reducing ideas to data, with the metaphysical claims of their independent existence. Ethical values and purposes of library operations are expressed by their ideal goal of providing satisfactory and objective service to the patron. This model is used as a framework for the present study.

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OBOLER, ELI. 1976:

"In whatever technological form the library of the future emerges, it will still have the double function of acting as a repository and a communicating agent. It will be a storehouse for information and culture, as well as a conveyor of what its public needs and want, whether in literature, art, music, science, or any other part of knowledge and the arts." (p.240)

"Without intellectual freedom a librarian is only a bookkeeper, a storer, a book-handler. With it he can fulfill his rightful function as truly a guardian of the truth." (p.242)

Martha Gould (1985) in her review of the Oboler book emphasizes Oboler's warning about the consequences of accepting technological innovations that would disregard possible civil and political problems related to intellectual freedom and limited access to information. The new technology creates a potential danger of limiting access to expensive electronic formats and to reduce financial supports of libraries.

---- 1977:

This is a critique of Zoia Horn's notion that all material advocating censorship should be withdrawn from the library. Free access to all ideas implies inclusion of pro-sexist, pro-racist, non-sexist and non-racist material, concerning all sides of these issues.

"If the librarian as librarian in the performance of his/her duties and obligations to his/her institution becomes a social advocate in the library, then the whole marvelous tradition of the American library is dead." (p.1429)

---- 1979:

Quotes F.A. Ebert's description of a librarian as an unprejudiced book-selector, and the Ortega's notion of a librarian as 'master of the raging book" serving as a filter interposed between the reader and the 'torments' of books. Oboler adds his own definition of librarians' purpose as "to do everything possible to ensure a free flow of information and recreation and even enlightenment to his or her library's users. The librarian, in short, is an opener of blocked pathways in the maze of knowledge, a blazer of trails in the encompassing dark forest of ignorance, a leader in keeping human mind free," (p.22)

---- 1983:

This is a small collection of essays about philosophy of librarianship. It does not discuss intellectual freedom or censorship. One of the assumptions in the book is the notion that librarians must shift their attention from the focus on print media to the custodianship of the access to ideas recorded in a variety of formats.

O'BRIEN, M.D., 1891,

" A free library may be defined as the socialist's continuation school. While state education is manufacturing readers for books, state-supported libraries are providing books for readers. The two functions are logically related." (p.329)

The individual should buy his own books, thus being independent of public charity and free from the instrument of societal propaganda.

ODI, AMUSI, 1982:

In this paper a concern is expressed about the emerging trends in library and information science to quantify human behavior. This trend is based on a wrong assumption that reality can only be explained through hard data, from which mathematical, statistical and sociological values are derived. The fallacy is based on a failure to distinguish between statistical, numerical description and explanation. Theoretical explanation is derived from the abstraction of empirical data, not from their generalizations.

The law of evidence is indisputable in research, the question is what the evidence consists of.

"The researcher brings together his personal, creative conception with his empirical observation to create a third thing, the offspring of this union: a theory." (p.315)

OGBURN, WILLIAM FIELDING, 1934:

Recreation, by competing with adult education is its enemy; the library should combine the two by providing books interestingly written and by using propaganda in its competition with other agencies. Propaganda and advertising are psychological stimuli to create a response.

The libraries could also provide the foresight, anticipating the needs of the patrons by knowing in advance about the publications of interests to their readers. It would compliment the historian's hindsight.

OGILVIE, RUTH A., 1940:

The author argues against impartiality, and for shaping public opinion. The significance of a library as a social force is illustrated by the very acts of suppression of library activities in dictatorship.

The librarians must be a powerful force in the shaping of public judgment, they must produce the evidence on which people can form their own beliefs. Librarians are not so much the teachers as guides with the duty to "shape the way of public thinking by offering touchstones against which one may judge the crucial issues of all time." (p.645)

O'HALLORAN CHARLES, 1967:

Librarians should accept some responsibilities for human existence by commitment to the idea that (1) human beings are important in making choices based on understanding, (2) librarians must help individuals to be informed, and (3) perform as challengers, following Socratic dictum of questioning simplicity of many assumptions about human existence.

Librarians can abandon practical concerns of 'how' of library techniques and activities by concentrating on mankind itself, its problems and progress.

---- 1980:

There are two basic library activities: (1) getting, organizing, storing, locating, providing books and (2) more relevant to human needs, providing psychological, affective service.

The image of a librarian as bibliophile is nowadays replaced by a more attractive image of the social activist/information specialist. However, nothing done are ever emotionally neutral or meaningless.

"Our generation of librarians has forgotten . . . what the old-fashioned scholar librarians knew so well: that the promotion of the progress of men's minds, a progress that is depending upon knowing the products of men's minds, brings to the librarian the satisfaction of knowing that he has indeed helped to shape the world!" (p.4)

OKKO, MARJATTA, 1985:
The triadic relationships between practice, education and research are considered as continuous actions and as different aspects of the same dynamic totality.

The triadic totality is represented by a triangle that reflects relative significance of each component, with each apex representing a maximum value (its absolute dominance in that phase of relationship) with the other two components, at the opposite side of the triangle, having no impact on that aspect of relations. "Correspondingly the totality can be divided into three domains, each dominated by the phase represented by the apex but it contains varying amounts of the other two phases." (p.3)

For example, in the triangular relationships between a library (L), archives (A), and documentation/information activities (D): L-A-D is the totality; L-A represents custody of documents and services that are based on them as opposite to information handling; L-D represents bibliographic aspects as opposed to handling unique records; A-D stands for records management as opposed to the handling of published material.

Similarly, in the triangle between totality of LAD, R (research) and E (education): E-LAD combines practical and pragmatic approach vis-a-vis research; R-LAD represents research and development (R&D) approach; and in E-R pair the elements are considered analytically in a broad context.

OLAISEN, JOHAN L., 1985:

Paradigms are the foundations of theories, defining the domain of a discipline, its research questions and their interpretations.

The paper addresses the metatheoretical aspects of library science with qualitative, limited generalizations about central discipline's tendencies. Science is interpreted as a balanced transformation of knowledge (generalized reality), problems (discrepancies between known and unknown) and instruments (methods).

The scientific orientation prescribes the relationships between data sentences (empirical), theory sentences (hypotheses), and value sentences (a preferred world).

The science triangle consists of (1) data (D) - theory (T) - values (V), and (2) interrelated: Empiricism (D-T), Criticism (D-V) and Constructivism relations (T-V).

Library science is analyzed in terms of four paradigms: (1) Functionalism of empiricism, (2) socio-political predictable uniformities in library behavior, (3) subjective, studying library behavior from the participant's viewpoint, and (4) liberating paradigm identifying psychic and social processes.

The author uses metaphors as a way of understanding aggregate experiences. He differentiates between a number of metaphors: (1) functional, emphasizing purposive decision making, (2) organismic, differentiating between library production and user orientation, (3) a 'trademark royal user' metaphor expressing patrons' loyalty to the library, (4) 'political economy' metaphor describing the productive economic and political power interplay, (5) a 'political marketplace' metaphor determining the future functions of libraries, and (6) 'spaceship earth' metaphor emphasizing the interdependence.

Subjective worlds' metaphors include: (1) 'experiencing man' metaphor of patrons' everyday experiences, (2) 'irrational man' metaphor of undefinable aspects of human behavior, and (3) 'language and text' metaphor that refers to the spontaneous language use as more expressive.

The liberating metaphor concentrates on the alienating role of library theory and practice. It is subdivided into metaphors of (1) the 'victimized user' (the nonusers), (2) the 'functional man' focuses on the functions of the librarian rather than library users' needs, and (3) the 'new man' metaphor calls for collections adjusted to knowledge growth, organized by functions.

"The library field has limited itself to a functionalist orientation (i.e., logical empiricism) and has . . . remained a one-dimensional science concerned with technology and problem solving." (p.148) "The socio-political, subjective worlds, and liberating paradigms challenge the assumption of functionalism by generating metaphors resulting in quite different research questions. " (Ibid.)

OLSGAARD, JOHN N., 1989:

Olsgaard asks philosophical questions: how mind makes the transition from symbols to thoughts; is there a pattern, and how it can be optimized? How do people think? How a computer may reach an independent conclusions by limiting computer decision making to a very narrow basis in a limited field of expertise?

Information science consists of (1) bibliomnetrics (statistical distribution of information), (2) storage and retrieval of information: (focus on speed and accuracy), and (3) transmission and use of information. Information/knowledge transfer includes: (a) linguistics (study of logic in the use of language), (b) communication (e.g., natural language processing), and (c) computer science in vivo (real life) and in vitro (in artificial environment).

ORACION, LEVI V., 1983:

Different philosophies of public libraries fail because "they are too much concerned with their own parochial interests, and cannot therefore serve as a philosophy for the public library, the very nature of which demands that its philosophy be derived from larger and more ultimate concerns which will set it in the context of its relation to the socio-political order." (p.120)

ORMAN OSCAR C., 1935:

The head-in-sand ideology of librarianship must be replaced by a philosophy of action. "There is no place in library practice for the traditional librarian who is entirely dependent upon others for a library financial support. Philanthropy has ceased. We exist in a government of pressure groups. Librarians must either exert their own pressure, or be forced to accept starvation budgets and satisfaction alone in meaningless plans." (p.827)

In an 1936 editorial response to this article, Wilson Bulletin for Librarians disagrees with Orman's notion that the philosophy of librarianship can be simply expressed in a single word like 'action' and that this by itself would result in getting financial support.

---- 1940:

Orman admits his error in believing that a philosophy of librarianship could be formulated about the concept of 'the will to act', expressing only the form but not the substance of librarians thoughts and actions. Now he thinks that " a proper function of all librarians is to understand propaganda and to inform other of its forms and effects." (p.450)

ORR, J.M., 1977:

The philosophy of library system is defined in terms of seven laws of general systems theory. LAW 1: "Individuals prefer states and, if distributed, tend to try to regain equilibrium or homeostasis." LAW 2: "Individual interacts with environment and exhibits behavior, action and change." LAW 3:"The behavior of an individual is explained by the structure of individuals of which it is composed.", LAW 4: "Systems are either deterministic or probabilistic." LAW 5: "Growth is an important pattern of behavior." LAW 6: "The dynamic relationships between individuals are either parasitic, competitive or complementary." LAW 7: "An understanding of the communications between individuals is essential for a full comprehension of the system." (pp.4-10)

Philosophy of librarianship developed as a communication system. It is a collective memory of human, supreme quantitatively but slow in its retrieval function. Its own creative ability is nil, but it complements people's mind by feeding it with data on which the recreation of knowledge is nourished.

Information received from the library is at best secondhand, and is not comprehensible to a person without appropriate prior knowledge.

The close connection of a library with the art of writing, teaching and learning already existed in temples of early civilization. Library specialization resulted in separating a museum from the library.

Both publishing and libraries disseminate books to readers, one motivated by monetary profit, the other by the needs of the reader. Interlibrary service is an idealistic and altruistic design to tap the total resources available, to overcome not only the deficiencies of individual libraries but also of the book trade.

" A library is a communicatory tool created by man to complement his own deficient memory. It is a store for his graphically produced records no matter what their format.

Its relationship with man is cyclic: it feeds his mind with information, much of which is reprocessed and returned to the library. The library system therefore exhibits growth.

Its real effect on society is probabilistic, but over a length of time it undoubtedly helps it to change.

In the long run, it is a complementary system to the other communicatory tools of man, but in the short term it is competitive with other communication media." (p.212)

ORTEGA JOSE Y GASSET, 1934:

" Up until the present, the librarian has been principally occupied with the book as a thing, as a material object. From now on he must give his attention to the book as a living function. He must become a policeman, master of the raging book." (p.151)

"It is necessary, then, to create a new bibliographic technique, one of vigorous automatic action. This technique will raise to its highest power, the labor that begun by librarians some centuries ago in the form of catalogs . . . the hour has arrived for the collective organization of book production; for the book itself, as a human modality, this organization is the question of life or death. (p.153)

"Furthermore, the librarian of the future must direct the non-specialized reader through the 'selva selvaggia' of books.

He will be the doctor and the hygienist of reading . . . the mission of the librarian ought to be, not as it is today the simple administration of the things called books, but the adjustment, the setting to rights, of the vital function which is the book." (p. 154)

---- 1935:

"Today more reading is done: the convenience of receiving with little or no effort innumerable ideas stored in books and periodicals is going to accustom man, and has already accustomed the average man, not to think for himself and not to think over what he reads, which is the only way of making it truly his. This is the most serious negative factor of the book . . . I imagine the future librarian as a filter between books and man." (p.307)

OTTEN, KLAUS W., 1974:

The development of science of information is traced in four steps: (1) considered on the structural, analytical and semantic levels; (2) distinguished as coding, statistical and transfer-of-meaning; (3) based on recognition of interdependency between matter, energy and information; and (4) established importance of communication processes in information.

Information can be (a) static (stored) or dynamic (in process), (b) as a commodity (produced, stored, transported and lost), (c) as a process (raw information transformed into meaningful information). In turn, (a) static information is structural, (b) as a process it is probabilistic, bringing a surprise element, and (c) as a commodity it has semantic value to its users.

Energy, matter and information are interdependent, limiting information-related processes, and suggesting philosophical questions: (1) Can information exists without physical representation? (2) Can information be understood by virtue of its physical and measurable manifestations? (3) What determines the relationships between informational quantities and the measurable, physically observable correlates? (4) Is information a continuum or is it quantified? (5) What are the limits of information manipulation by matter and energy? (6) What are the laws that impose limits in operations on information in a given physical system? (p. 103)

OTTEN KLAUS and ANTHONY DEBONS, 1970:

A distinction is made between information and operations on information. Information is a fundamental abstract phenomenon; operations on information involve manipulations based on its own laws. "The ability to translate complex information processing tasks into sequences of elementary operations may be accepted as evidence for the fundamental nature of information and of information processing." (p.90)

Information theory evolved from the measurements of signal transmission over communication channels; information is here a measure of an expected value. Metascience provides (a) descriptions of common information based on related disciplines,

(b) common language, and (c) means for translating knowledge from one discipline to another. In metascience of information the same functions are performed by offering: (a) common bases for information-oriented disciplines, (b) common framework for information technologists, and (c) abstract theories explaining information phenomena and the theories describing human relationships to information.

Information science as a part of library and documentation focuses on laws of classification, information storage and retrieval. Metascience of information is viewed as a special science concentrating on the foundations of information-related sciences and technologies but not their contents.

- P -

PACEY, PHILIP. 1975:

"Our starting point must be the power of libraries, which is the power of the materials they contained, the power which is contained in those materials . . . librarians forget that the objects they deal with are means to ends, and it is the ends which are our raison d'etre." (p.96) "There is a tendency to over-emphasize the form in which content comes, rather than the content itself - to think in terms of books, periodicals, slides, microforms, and perhaps to arrange them accordingly, whereas in actual fact it is the content of these things which readers are generally interested in irrespectively of form." (Ibid.)

It is "a part of the librarian's role to be a catalyst bringing together the two necessary elements in the reaction which will release the power we are talking about, library materials, and library users." (p.97)

PANSEGROUW, J.G., 1988:

The author discusses the philosophy of Cosmonomic Law, pointing out that "an important principle is that all theoretical thought proceeds from a basic motive - in this instance a Christian motive - and that autonomous thought does not exist. Theoretical thought consists of an analysis of the different aspects of reality, experienced integrally in pre-theoretical though. Every aspect is subject to distinctive laws . . . and aspects are therefore irreducible." (p.170)

The author applies these principles to an analysis of libraries and librarianship "in an attempt to evaluate the potential role of this philosophical theory in establishing the foundations of Library and Information Science." (Ibid.)

---- 1990:

The author compares the Darwinian theory of natural selection with Piaget's theory on information-seeking behavior as the primary mechanism in evolution. He criticizes the acceptance of the former model in Library and Information Science as ambiguous, failing to reconcile the notion of intellectual freedom with the concept of social responsibility. He prefers Piaget's theory for its focus on cognitive structure.

"It is argued that knowledge of the implications of the two radically different approaches is necessary in research and in professional practice." (p.241)

PARGELLIS, STANLEY, 1952:

The bibliography was considered by Butler as an overall discipline of librarianship. Collection of books is selected and organized to meet the needs of an individual patron. Hence any libraries preserve cumulative intellectual content of culture. Librarians can fulfill their responsibility only by being familiar with the collection.

This ideal of not only organizing but also understanding the library collection in terms of its potential use, is a twentieth century equivalent of the seventeenth century encyclopedic ideaol of a universal librarian as a scholar. Both approaches assume, that without a library no country can be civilized.

PARK, CHUNG I, 1987:

"The new librarians or information specialists are ambidextrous' they maintain a passion for books and reading while keeping themselves conversant with information technologies which are no more than tools. To reflect this new capacity of ours we need new names [names like] information scientist, information manager, or information whatever give us a sense of new directions [helping] us to be tuned to the computerization of general society [and] provides us with the opportunity to upgrade our status." (p.6)

PARKER, J. STEPHEN, 1974:

The author questions the future impact of Western, Anglo-Saxon philosophy of librarianship on the development of libraries in other countries.

It is feasible that with the decline of Western industrial civilization, and shift of political and economic power to oil-producing states, the basic concept of individualism may be rejected, thus changing the future role of libraries in those countries.

PARKER, MARILYN M. and ROBERT J.BENSON, 1987:

Information economics measures and justifies the value of information technology based on business performance. Information is considered a new conceptualization of a decision making process.

New techniques in evaluating information include a number of value-concepts. (a) Both, value linking and acceleration analysis of assess costs that enable benefits to be achieved in other departments, are rooted in economics rather than business finance. (b) Value restructuring analysis assumes that because a function exists within an organization it has value. (c) innovation and investment valuation are applied when the financial issues change from measuring to evaluating and choosing among new alternatives.

Underlying all this is a concept of change. The real benefit of information technology arises from a change in business.

Without change there is no benefit and information technology becomes irrelevant.

Information economics expands the traditional economics by the focus of value on: (1) enhanced view of returns on investment, (2) strategic match, (3) competitive advantage, and (4) management information. It also implies five classes of risk and uncertainty: (1) strategic (likelihood of success) (2) organizational (dependence of the information system project on new capabilities), (3) information infrastructure risk (environmental risk) (4) definitional uncertainty (specificity of the user's objectives), and (5) technological uncertainty (dependence on new technology).

PARRISS, JEAN, 1958:

Many people do not know what they want; librarians ought to adapt Madison Avenue selling technique, by appealing to hidden needs of patrons such as emotional security, ego-gratification, satisfaction of creative desires, fulfilment of the sense of belonging and immortality, by suggesting to patrons a right book.

PEACE, NANCY E. and NANCY FISHER CHUDACOFF, 1979:

Current library thinking focuses on organization and dissemination of information regardless of a format. Hence librarianship should also encompass archives. Their common ground is the control of information, although archivists focus on a unique technique.

Both disciplines should have the same kind of education with added special training for the archivist in history of archives, appraisal, arrangement and their description.

The introductory courses on the nature of librarianship should encompass all types of information professions.

PEARSON CHARLS and VLADIMIR SLAMECKA, 1983:

Informatics is a semiotic discipline encompassing information, computer science, engineering, technology, robotics, cybernetics; most of them are technologies or professions rather than sciences.

Informatics is concerned with symbolic expressions and their manipulation with all elementary kinds of signs.

The minimal atomic elements carrying meaning and information are called signs, and the basic science of information, called semiotics deals with the structure of signs. (how they carry and process information and meaning).

Charles Peirce divided the structure of all signs into: (1) the medium, the body or existence of a sign, (2) the object or designation of a sign, and (3) the interpreter, interpreting a sign. Morris named them as syntactic, semantic and pragmatic dimensions.

Information can be manipulated by means of: (1) deductive and inductive reasoning, and (2) retroductive, method of reasoning (i.e., inventing a hypothesis, which, if true, would explain some known results, indispensable in nomological sciences).

Knowledge and action oriented components of informatics should not be separated, since there is no such thing as pure and applied science, only good and bad science.

PEIRCE, PATRICIA, 1951:

The author compiled the first American bibliography of philosophy of librarianship, covering the period 1930's-1950's.

Peirce noticed a lack of well-developed library philosophy, and a constant change in the library functions and scopes. This in turn may suggest that the change may be the only enduring principle in Henri Bergson's sense, thus bringing library philosophy into the family of philosophical disciplines.

The reviewed essays revolve around three central concepts: (a) library (not librarianship); (b) book (not its content), and (c) the philosophy of librarianship (not its theory).

The study creates an impression of a search among librarians for respectability: (a) to glorify the function of custodianship, taking a credit for the value of material collected and protected by librarians; (b) to identify librarianship with better established professions, e.g., teaching, and (c) to express a need for belonging.

These considerations result in confusing-or fusing-objectives with attributes, as if saying that since the chair is to seat on, the function of the chair dealer is to promote sitting activity.

The author's review points to (1) complains about lack of philosophy explained by a lack of interest, and pragmatic character of librarianship; (2) a need for the philosophy prompted by a drive for professional status, (3) present uncertain scope and purpose of librarianship and (4) a lack of a commonly agreed statement about librarianship.

PENLAND, PATRICK R., 1971:

The library is considered as a process not a place. In cybernetic model of communication information is processed by the adaptive control organism which selects from the incoming stimuli those that contain relevant information. The selection is directed by the preferences and concepts already existing in the mind of the receiver.

The librarian's function is to reduce the patrons' entropy (of uninterpreted stimuli) by counseling them on the areas of needed research. Here counseling and information retrieval are the two sides of the same coin.

"Once assisted in vocalizing his need, the search begins for information from documentary sources that will help the individual understand and synthesize his previous disparate experiences." (p.6)

---- 1982:

"The client-centered librarian shares a philosophy similar to the educator toward the development of personal esteem and self-provider lifestyles; and the learning that is facilitated is rooted in individual self-initiative." (p.45)

Librarians become 'missing links' in the learner-teacher transformation, providing 'a shopping center' access to self-help through activities such as outreach to the intercultural community, access to referral, exchange and consultant services.

PENNIMAN, W. DAVID, 1987:

The author proposes a model bridging the gap between technical possibilities and actual implementation of technology in information transfer. In that model crucial are the interventions (moving ideas from creation to application) and feedback (accountability in a form of analysis of availability of technology and market for possible services).

Librarians must provide strategies for expanding services with cost constraints by becoming innovators, interveners and analyzers, considering the library as business venture, as well as social institution, competing with other agencies for limited resources.

---- 1991:

The author discusses the responsibilities of the library to shape the future, not be shaped by it, by developing people-oriented information delivery systems focused on social responsibility of librarians and by changing from the role of a gatekeeper to that of information deliverers. "The success of a library will not be measured by the amount of information it collects, but by how effectively it delivers that information." (p.26)

PERITZ, BLUMA CHEIl, 1977:

Review of the early research philosophy in librarianship offers a historical context for the development of the research in later periods.

"The philosophy of research which evolved during the period of intellectual ferment of the late twenties and early thirties was both broad in its outlook and practical in its application. Firmly founded on a view of the library as a social and educational agency it sought to improve the library's functioning through a scientific assessment of the needs and motivations of the public, through the analysis (by whatever method) of the material available for the satisfaction of these needs, and through the evaluation of the library's performance. The main focus was the functions and roles of the library rather than the processes of library work [applying] methods and results from other disciplines, mainly from psychology, the social science and education." (p.12)

PERRY, BRIAN, 1986:

Currently the basic research philosophy is to support information-technology-related research that focuses on the relevance of information technology to information community.

The research programs listed by the British Library Research and Development Department provides examples of the current trends in information research. The subjects include applications of optical disks and networking in publishing, archival and library activities, online public catalog, information policies role of information in business and electronic publishing.

PERRY, JAMES W., 1956:

The "analysis of the nature of human knowledge leads directly to important implications for the development of systems for classification, indexing, and, in general, for analyzing graphic records so that they may be retrieved and correlated. As the range of observed phenomena and events broadens, our ability to correlate observations must be made flexible and comprehensive. This requirement exerts a direct influence on methods for processing and using graphic records." (pp.97-98).

"The challenge to librarians . . . is to develop methods, procedures, systems and equipment that will enable our ability to use and to extend human knowledge to keep pace with its unprecedental expansion." (p.99)

PETERSON, KENNETH G., 1983:

This essay on library ethics is based on three assumptions: (1) all humans have sets of value, (2) ethical behavior rest within a shared interest, and (3) behavior becomes unethical when it favors special interest out of proportion to interest of society as a whole.

Librarians' code of ethics involves: commitment to intellectual freedom, free access to information, high level, fair and equitable service, resistance of censorship, protection of user's rights to privacy, adherence to due process, equality of opportunities, distinction between personal philosophy and that of the institution, and avoidance of personal gains at the expense of users, colleagues or employing institution.

Application of professional ethics to a library situation is illustrated by a number of behavioral attitudes. (a) In collection development: examination of priorities honestly and realistically, resistance of pressures and overreliance on interlibrary loans. (b) In communication: its absence, avoidance of selected release of information, or providing different interpretation to different people, (c) In professional behavior: integrity of the text (not compromising authors' creative work), commitment, teaching, administrative competence, honesty in research, respect of other people, admission of own mistakes, commitment to continuing education, and recognition of achievements by others.

PETOCZ, L., 1969:

Aristotle's analysis of change consisted of isolating three elements: terminus a quo, terminus ad quem, and the process. The terminus ad quem, the end of the process, is clearly identifiable with the reader; the process itself can be identified with communication, that is, with the transfer of information; while the terminus ads quo is either the books or the librarians or boh. The lack of a satisfactory answer which of the two it is, causes ambiguity and confusion.

Library science has been concerned with the communication processes requiring psychological knowledge of the reader. Hence

Piaget's research in child psychology is of high relevance to library science by developing genetic dimension of epistemology.

PICKUP, JOHN A., 1987:

Common characteristics of the information profession include: (a) concern about organization of external knowledge and its use together with the internal knowledge about itself, (b) use of information in decision making, and (c) information monitoring of change.

Responsibilities are divided between (a) librarians responsible for information sources and their structuring, (b) services of assembling and selecting information, (c) 'pro-active intelligence' services rationalizing, correlating and analyzing the use of information.

"The business we are in is . . . the support of the continued progress of mankind and civilization, by making possible the effective use and application of the growing fund of knowledge." (p.290) "It is the science of information use, rather than of storage and retrieval." (Ibid.)

PIERCE, SYDNEY J., 1992:

Librarians and library students should be expected to read classic works dealing with theory, and intellectual history of librarianship. Pierce rejects the excuses that librarianship has no seminal thinkers or as a young discipline it did not yet developed its own theory. Librarianship and social sciences emerged at the same time in late nineteenth century, yet some sociological search for intellectual roots extends far into the past, and so should librarians' foundations.

Educators, students and practitioners would benefit from reading more about works heard about but never read. "If older books and articles turn up in search of the professional literature, find out what they have to say. Browse old volumes of professional journals, they remain both relevant and readable . . . works of quality are there, waiting for us to (re)discover them." (p.643) "If we don't learn to respect our own intellectual history, who else will?" (Ibid.)

PLAISS, AMRK, 1983:

The author criticizes H.S. White, for his preference in library education for the intellectual and philosophical focus rather than for teaching library skills.

"Library education must be empirical to produce competent beginning librarians. Students must be thought what resources are useful in the selection, organization, and retrieval of information, and how to use these resources . . . But library schools, obsessed with 'professionalism' fail to produce competent beginning librarians." (p.618)

White's "theory of library education coincides with Jesse H. Shera's statement that 'the primary aim of education for librarianship should be training of the intellect in matters pertaining to human knowledge." (Ibid.) According to Plaiss, "librarianship is a help, a guide, a tool in the pursuit of knowledge or information. It brings together patron and information, nothing more." (Ibid.)

POND KURT and DWIGHT E. BURLINGAME, 1984:

To cooperate means to work together for a common objective or to unite in producing a desired effect. This definition implies that cooperation requires coordinating actions, sharing goals and coordinating attitudes for a harmonious behavior of involved library staffs.

Cooperation as an activity is a means to ends; the activities and their objectives must be distinguished to avoid false inferences. Selection of cooperative objectives is crucial in assuring the occurrence of cooperation and the successful completion of the project. Librarians must rely on probabilities rather than certainties.

The philosophical principles of cooperation provided a base for formulating procedures that are instrumental in achieving the desired objectives of increased serials acquisition.

POOLE, HERBERT, 1985:

Information science is (a) practice-oriented, (b) lacking a consensus on its definition, and (c) its intellectual foundation has no satisfactory supporting theory.

The author discusses a number of attempts to construct a theory for information science by using a variety of research methods.

Slamecka proposed three clusters of research: formal, cognitive and social. Poole focuses on the second and third research type, by investigating the suitability of Merton's theory of the middle range for information science.

The middle-range theory is defined as "a low-level theoretical statement intermediate to a general system theory which is too remote for the empirical situation to account for what is observed, and to descriptions of particular situations from which the ability to generalize is restricted." (p.26) It has its roots in Francis Bacon's 'middle axioms'.

The theory provides an approach for research on special theories appropriate for the available and limited data, each constituting 'building blocks' of systems theory. It can guide empirical inquiries, serve as an intermediate theory, uses abstractions and empirical tests, and ends in developing special theories that consolidate empirical findings, based on the large amount of empirical data.

The book is criticized by A.M. Schrader (1986) for lack of sufficient evidence for his theory and poor review of relevant literature.

POWELL, B.E., 1960:

"The library is essential to continuance of a democratic society. It is playing a critical role in our nation's destiny. Every thinking person needs the information, the background that only reading can give. The library's role is not passive, but a dynamic one that places great responsibility in the hands of the librarian. As a custodian of the intellectual arsenal of democracy, librarians must assume a role of a leadership in safeguarding and advancing our democratic heritage." (p.60)

POWELL, JUDITH W. and ROBERT B. LELIEUVRE, 1979:

Authors discuss the application of Samples (1976) model of metaphoric mind. Metaphoric mind is 'the mirror image' of the rational mind, considering all things as undifferentiated, holistic unified part of the world.

In the brain the left cerebral hemisphere is a logical organizer; the right hemisphere provides a holistic perception and relations, thus justifying the distinction between rational and metaphoric modes of consciousness.

"Samples argued that science, psychology, and educational theory and practice are based on a philosophy of linearity . . . (i.e., logic) and use a process of linearity (i.e., language) (leaving) untapped right cerebral hemisphere functions, the metaphoric mind." (p.55)

Children move between the two rational and metaphoric experiences, reflecting play-work sequences in learning. The library is a primary storehouse of knowledge and information and the only place that provides an environment for interrelating the rational and metaphoric experiences, thus offering an education for a complete person.

This model is learner-centered, making the content of library collection more relevant and personal by making use of thinking, feeling and fantasizing with minimal anxiety-producing and minimally threatening.

POWELL, LAWRENCE CLARK, 1954:

The book represents an esthetic and moral approach to librarianship promoting learning, liberty, understanding and tolerance. The librarian is a bookman, administrator, educator, and public servant.

Powell describes passion for books, considering bookman more important than an administrator, but he also advocates avoidance of extremism, since administration is needed to make book efficiently available and preserved.

The ideal librarian should: (1) be bookman by choice, education and experience, (2) be a teacher, (3) oppose censorship, (4) value books as artifacts, symbols, and as alive, not dead things.

---- 1957:

Powell maintains: "(1) that books are basically useful, that they will be supplemented but not replaces, (2) that people need books and the nourishment they contain, and (3) that librarianship consists essentially of collecting and preserving books and of enabling people to instruct the mind and delight the spirit with books." (p.313)

"Let us not teach librarianship as science and techniques

. . . rather should it be taught as a human calling of service to people. In the beginning the why of librarianship is more important than the how." (p. 316)

---- 1959:

A good librarian (a) is energetic, (b) has an encyclopedic mind, (c) is honest and selfless, (d) orderly, (e) tolerant, (f) courageous, and (g) dedicated to the service of others.

" Earth, air, fire, and water are the elements of physical matter. Curiosity, perception, courage, and dedicated belief are my elements of good librarian. O Lord, help us be such!" (p.46)

---- 1986:

This is an autobiography. W.Goodwin (1987) in his review of his book says: "As the library and society becomes more technocentric, as education becomes less liberal, and as the modern world becomes more ruthless, violent, and bizarre, the value of humanistic spokesman like Powell seems embattled."(p.469) The beginning of the autobiography "corresponds roughly with the moment when library 'service' became library 'science,' when 'matters of organization, techniques, networking, and bibliographical control took center stage." (Ibid.) "The revival of humanistic librarianship may be chimeric . . . but the book remains [the expression] of that simple, but potentially world-changing union of book and reader." (W.Goodwin, 1987, p. 469)

PRATT, ALLAN D., 1982:

This is a discussion of library and information science in the context of human communication processes, by proposing a model for information that establishes "a 'philosophy' of library service which is consistent both with the traditional view of the profession and with the properties of the communication model." (p.3)

The model interrelates five elements: source-receiver-medium-language-purpose, which in turn consists of ten triads, arranged in four groups of relations between (1) source and receiver, (2) source only, (3) receiver only, and (4) neither source or receiver. "This model of communication, of image alteration through the creation and use of graphic records, can serve as a framework for the delineation of the scope of both information science and librarianship." (p.22)

Information is a process of 'in-formation', defined as the name for a class of events, that alter the image held in the mind. To avoid confusion, Pratt proposes a new name for this kind of information: 'emmorphosis': "a process of change which occurs within the human mind upon receipt and integration into the mind of a structured message received directly or indirectly from some human source." (p.38) He further restricts the meaning of emmorphosis to changes initiated by the receipt of recorded, graphic messages, with humanistic interest in 'menta-facts' (the ideas expressed in the graphic records) and meta-records ('which is of, or about the record but not its intrinsic part').

Information science is defined as a study of the creators, users, uses, characteristics and distribution of graphic records. "Under the theory proposed here, no third-party observer can determine with great accuracy whether or not the informative event will in fact cause these changes in the inquirer's mind, because essential issue is the 'meaning' of the documents to the user." (p.40)

PREDEEK, ALBERT, 1939:

"The underlying idea of American librarianship is deeply associated with the cultural, sociological, and economic conditions of the nation." (p.445)

The fundamental ideas of the American library are education, culture and the nation. The firm belief of American people in the perpetual progress and improvement of mankind through education, learning and reading is due to the remnants of the Puritan conception of life and is the more understandable because in earlier times the book was practically the only mediator of learning and culture and the only distributor of ideas." (p.447)

"A decidedly new conception of librarianship and of the library profession is coming into shape in the library schools, the ultimate aim being a scientific investigation of the phenomenon 'library' and of its functions from sociological, administrative, legal, and cultural points of view." (p.471)

PROKOP, MARY, 1983:

In the relationships between personal and professional ethics of the public librarian the dilemma is created by a conflict between different approaches on issues such as intellectual freedom, censorship, job performance standards and professional behavior.

Ethics is defined as the part of philosophy dealing with questions concerning the nature and source of value, rightness, duty and related matters. Among its theories (a) relativism maintains that the judgment of right and wrong depends upon the observer, (b) hedonism assumes that behavior is justified if it results in happiness.

In general, morality is defined by situation, or ethical decision governed by intellect and ability to reason. Attitude influences behavior, hence personal ethics affects professional behavior.

Professional ethics is service-oriented but in terms of client's needs rather than his desires, thus leaving to librarians the determination as to what is actually needed. This results in a subjective judgment about users' actual needs.

The public librarian is responsible for meeting information needs of society at large, which supports the library, but which is also pluralistic. It is a 'myth' to consider the library as a neutral institution, providing free and total information access to all segments of society. The concept of neutrality contradicts professional commitment to serve all the people, by selecting material in terms of community standards, and for providing the patron exactly what he needs.

There are basically two ethical views in librarianship (a) the criticism of a 'gatekeeper' notion of providing information without consideration of the way it may be used or how it impacted on society. Here professionalism means extended accountability similar to the responsibilities of a physician, who does not give the patient what he wants, and (b) the view that the librarian should not superimpose his view on a given situation, personal subjectivity is unethical.

The ethics of professional behavior is determined by profession's knowledge base. Librarians are responsible for technology (organization, storing etc) of information rather than the in-dept knowledge in any discipline. This prevents them to give professional advice on any specific subject, but it requires provision of full and impartial access to available information, irrespectively of the consequences resulting from the use of that information.

Three ethical types of librarians are identified: (1) principled both professionally and personally, (2) expedient with inconsistent behavior, and (3) subscribing to one ethical standard only (professional or personal).

The author suggests specific solutions to the dilemma: (1) professional standards should be disseminated and enforced, (2) ethical norms should be based on community requirements and local library role, defining ethics for that particular institution, and (3).the library policies should provide well defined accountability of librarians.

PUNGITORE, VERNA L., 1989:

The basic assumption of this study is the premise that there is no one generic or typical public library, and hence to single model for public library operations.

The author points to two historical approaches that interpret the rationale for the development of public libraries in USA: (a) traditional view maintaining that the motives of library founders were altruistic aiming at self-education and self-improvement of population, and (b) the revisionistic view seeing the establishment of a public library as a device for controlling the masses and maintaining the status quo.

The lesson of library history points to the importance of library adaptation to the changing social needs. However, any response to the changing environment would require modification of some basic principles, such as, for example, the commitment to intellectual freedom and unbiased access to information. This in turn, may pose a paradox: "An agency attempting to promote social ethics rarely does so by allowing the opposition equal time. It may prove difficult for public librarians to continue to make available dissenting opinions on social issues if they embrace fully the role of social change agent." (p. 40)

PUTNAM, HERBERT, 1915:

The essay offers a legalistic defense of public ownership of books in general and specifically of ephemeral publications held in the public library (they reflect needs of current readers).

Too much print can not damage people by reading too much. To serve all levels of population, a library must provide for all tastes. The quality of the reading can be improved by actual reading and librarian's 'mediation' in selecting books suitable to patrons' needs.

Putnam recommends open access (better books will be selected more often), use of staff to counsel patrons, and acquisition of current fiction, kept for one year only. The advantages of reading current fiction (i.e., books contemporary with their readers) are in relaxing the attitude toward a book, requiring no effort and increasing the use of the library (as contrasted with the past attitude of ignoring non-readers).

PYLYSHYN, ZENON W. (1983):

Cognitive science is primarily an empirical natural science concerned with problems in information science related to the exercise of intelligence in natural and social environment.

It is: (1) formalistic in terms of symbolic mechanism, (2) functional explaining biological, biochemical and biophysical laws in terms of information processing functions, (3) computer technique formulating and explaining its theories, (4) top-down analysis stressing general cognitive skills rather than accounting for empirical particulars. (6) its approach is phenomenological with existential notions of significance and meaningfulness of behavior.

Cognition is explained in terms of regularities in semantically interpreted symbolic representations. Following disciplines are relevant to cognitive science: (1) anthropology, (2) computer science, (3) linguistics, (4) psychology (5) neuroscience, and (6) philosophy.

The above disciplines are interrelated; considered in sets of three, they represent separate areas of research, e.g., the triad of philosophy-psycholog-linguistics studies language and its use in cognitive tasks.

The four objectives shared by all cognitive scientists aim at: (1) abstract descriptions of the mental capacities manifested by the structure, content and function of various cognitive systems [abstractions], (2) systematic exploration of physical systems as alternative models of explanation [instantaneous], (3) characterization of mental processes underlying cognitive functions in living organisms [plausibility], and (4) neuro-physiological, biological mechanisms involved in cognition [realization].

Cognitive science influences: (1) Control theory by addressing teleological, purposive behavior in terms of feedback, (2) information theory by describing relations between certain physical properties and maximum rate of information processing and transfer, regardless of its meaning, (3) decision theory by optimizing social and management processes, (4) computers mechanistic conception of mind, (5) general systems theory by providing abstract principles shared by living organisms, social systems, electronic computers or other artifacts, and (6) cybernetics by studying self-adaptive and organizing systems emphasizing learning, statistical pattern recognition and modeling neural networks.

- Q -

QUINT, BARBARA, 1992:

"Librarians no longer serve the books that serve the clients. Questions rule in the age of answers. Linked by its commitment to client information needs instead of knowledge of specific tools, the library profession becomes an information profession defined by its ends, rather than its means . . . tasks and opportunities push informationists from support roles to management, from middle managers to executives, from followers to leaders." (p.32)

Two of the traditional goals of librarianship remain the same: archives and access. Print remains important for specific needs, a book expands the scope of patrons' interest by raising questions that in turn ask for specific answers. The collection-driven library is replaced by question-driven service to the patron. In the future librarians should be initiators of information transfer instead of being respondents to questions asked.

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- R -

RADFORD, GARY P., 1992:

"This article argues that modern conceptions of the library are informed by a particular view of knowledge grounded in early twentieth-century positivism. From this standpoint, the ideals of neutrality and access have achieved prevalence as the basis for understanding the institutionalized practices of modern libraries. This view of knowledge also serves to structure significantly the library experience of individual librarians and library users." (p.408)

"From the Foucauldian perspective, the library is seen as a dynamic site for the possibility of new knowledge as well as passive storehouse that provides access to individual facts." (Ibid.) Foucault questioned the positivistic assumptions of the self-evident objective world, substituting the term 'knowledge' by 'knowledge claims'. The latter concept, like Kuhn's paradigms, emphasizes the significance of knowledge organization in determining boundaries of knowledge. This is similar to the library's "arrangement of texts that provides the appropriate spaces in which the new knowledge claims can be located and given meaning. (p.418) "Truth is discovered not only in the library through the location of a particular text, as is implied by the positivist view of the library, but it is also made possible by their arrangements and in the 'spaces' that these arrangements make possible." (Ibid.)

This view combined with the classificatory neutrality of library organization of its records and Eco's philosophical notion of 'labyrinth' of endless relationships in which every point can be connected with any other point, can provide bases for library assistance in creating new knowledge through the endless, potential connections. "The fantasia of the library is the experience of the labyrinth, of seeking connections among texts as well as their contents." (p.420)

RADWAY, JANICE A., 1986:

This is a critique of 'eating' metaphor of reading. The author's claim that "some romance reading at least manages to help women address and even minimally transform the conditions of their daily life." (p.8)

Mass-produced art is not made by people who use them, hence it does not express initial recipients' beliefs. The producers of mass market use their financial and cultural power to manipulate people's feelings.

'Eating' metaphor is a simplification of reading habits and it caricaturizes the relationships between people and mass culture. The metaphor suggests consumption rather than production, weakening research into the reading habits and differentiating between 'mass' and 'serious' art.

Reader response theory maintains that ultimately readers are responsible for the interpretation of the text by referring to their past esthetic and cultural experiences. By distinguishing between "the act of book purchase and reading from the content of the books that were read, it becomes possible to see that romance reading was infinitely more complex that the traditional picture of it as the ritual consumption of patriarchal cliches dispensed by others." (p.13)

People do not 'eat' the mass culture as given, but modify it to their own needs. The author wants "to design a politics with respect to mass culture that would build upon their present creative strength as well as upon the dissatisfaction and discontent which, for so many, has nowhere to go but into the relatively 'free' real of leisure activities." (p.27)

RAFFEL, JEFFREY A., 1974:

Economic analysis focuses on choice, allocation of scarce resources and distribution of outputs. Cost-benefit analysis is an analytical examination of the costs and benefits of alternative decisions; it serves as a critique of the objectives selected by the library.

The political analysis relates to the authoritative allocation of values for a society; it affects the allocation of resources for different purposes. Political conflicts are present in all institutions, including libraries.

To economists library decision making process should be based on cost benefits, but political scientists offer no alternative approach. Both approaches ought to be recognized as different ways of thinking, requiring future research.

RAHMAN, ABDUL, 1961:

"The sublime philosophy of reference service has been drawn obliquely from the vedas, the classics, and the mystics of India. They fill us with the supreme delight of the mystics." (p.156) "The reference librarian should combine in his personality the distinguishing characters of the four sons of Dasaratha . . . he should, like Satrugna, control the ego in him which prompts him to do least and seek most. Like Lakshmana he should do service for its own sake . . . in devotion to duty, reticence, integrity and depth he should emulate Bharata. In geniality, charm. sociability and helpfulness associated with modesty and equableness of thoughts, word and deed Rama should be his guide." (Ibid.)

RAJAGOPALAN, T.S., 1986:

This overview of the papers collected in a tribute to Ranganathan reflects the overall importance of Ranganathan's contributions to librarianship.

Ranganathan's philosophy was twofold, aiming at the internal library needs in India and making major intellectual contributions to library science. His philosophy is summarized in the five laws of library science and his analytico-synthetic, faceted classification. His practical approach is reflected in his support for librarians professional education.

RANDALL. WILLIAM M., 1940:

The similarities between individual libraries are expressed in the purposes of librarianship to collect, preserve and interpret records to library users. In each instance the concept of the generic book is the same.

Libraries differ in their interpretation of individual books to patrons with different reading needs, and this is reflected in the arrangement of books and types of services offered in each library.

"The task of the college library . . . is to become a college library - not just a library in a college." (p.54) "The only valuable consistency is one that grows out of need, not one that grows out of practice." (Ibid.)

RANGANATHAN, S.R. 1948:

The public library is a human creation for social multi-purposes changing throughout the history from preservation and restricted use to unrestricted use by all. The changes are reflected in the five laws and their counter parts; books are (1) for use, not for preservation, (2) for all and not for chosen few, (3) every book its reader, (4) save the time, and (5) library is a growing organism.

"To get at the philosophy of public librarianship, we must . . . begin with the nature of man himself, his involuntary urges, his makeup, his evolution and the trend of his future." (p.50) Personality of an individual plays an important role in understanding readers' needs and librarians' use of technology in providing library services. It is formed by biological, environmental and psychogenetic forces.

Philosophy and sociology of librarianship indicates a need for a formation of a new discipline 'Librametry', relevant to the given period and changing with the times to reflect changing society.

---- 1951:

In general, philosophy is a study of general principles, in specific cases it focuses on principles of particular discipline. In many disciplines knowledge itself is the object of study: mind in psychology, new relations in logic, sources and validity in epistemology and ultimate components of knowledge in ontology.

Special subjects are "recognizable in the field of knowledge, the mode of their arrangement in a helpful order and the development of the apparatus to mechanize the recalling, preservation and restoration of the preferred order . . . [constitute] Library Classification." (p.12)

Library classification is a product of social forces, especially of the impact of printing and democracy. Increased printing made broad classification of books obsolete, democracy demanded the display of the books on shelf by their thought-content, thus increasing the number of classes in classification schema.

The universe of knowledge is a dynamical continuum requiring constant revision of classification. "The only course open is to find and enumerate the fundamental categories and the possible fundamental types of relation which can develop between them. By permutating the categories and relations . . . we get a representation of the formations in the field of knowledge." (p. 87)

---- 1963:

The library laws reflect operational philosophy of librarianship and provide the base for rules of library organization and management. They may be summarized as follow:

1: Books are for use: this self-evident law is contrasted with the focus on preservation and limited use of books in the 15th century.

2: Every reader his book: this law illustrates a shift from limited to universal education, with state obligation for financial support of libraries, proper management by librarians and staff knowledge of readers' needs.

3: Every book its reader: calls for a provision of relevant service facilitating access to the collections.

4: Save the time of the reader: it is a reader-centered approach based on efficient and effective use of library technologies.

5: The library is a growing organism: as a constantly changing institution it requires constant adjustments of its goals, planning, organization, physical facilities and personnel.

L.W. Finks (1992) pointed out that in the first edition, the second law read: 'Every person his or her book', thus indicating Ranganathan's sensitivity to women devaluation and exclusion.

RAO, K., RAMA KRISHA, 1961:

Librarianship has no philosophy that would give it an intellectual orientation. The conflict between theory and practice is rooted in the failure to develop philosophical synthesis.

Four modes of philosophical approach to librarianship are discussed.

1. Actional: librarianship involves a series of functionally distinct operations, emphasizing a practical side.

2. Organismic: librarianship is a whole field incorporating its functional parts; training should be comprehensive.

3. Naturalistic: evolves from crude percepts and practice to principles ending in refined theoretical concepts.

4. Reflexive: library functions change with the changes in social conditions of the library.

Philosophy of librarianship ought to define and formulate the responsibilities and the functions of the library. Those are reflected differently in each of the above approaches: (a) actional approach discards theory in favor of practice; (b) organismic approach is intellectual, subordinating techniques to principles; (c) naturalistic approach does not oppose theory but believes that the philosophy evolves gradually with the progress in library service; and (d) the reflexive approach stresses society as a source of philosophy.

RATCLIFFE, F.W., 1991:

The 1980s is seen by the author as the decade "in which the printed book, that fifteenth-century adaptation of the manuscript codex, reaffirmed its supremacy as the unbeatable vehicle for communicating and storing information. It is the containing of the growth in the output of the printed book that is preoccupying the library world at present, not its demise. This is true even in those areas where new media appear to offer a much more effective means of information handling. Ironically, . . . more likely to be due to the inability of traditional publishing to contain the information explosion rather than to the intrinsic merit of these new media themselves." (p.63) Both the new media publications and new scientific methods used in libraries today are the additions to, not the substitutions for the book and its traditional handling by libraries.

RATHBONE, JOSEPHINE ADAMS, 1932:

"Librarians cannot only create a library, make opportunities for intensive as well as extensive book service, inspire a staff to render the best possible book service by knowing books and understanding people, but they must give a comprehensive view of social trends and movements, that they may ally themselves and their libraries with all the constructive forces in the community that is helping to build a better world." (p.454)

RAWSKI, CONRAD H.. 1973a:

The search for efficient library operations is a part of library aspect of engineering, but without theory, efficiency is without direction.

"As a professional activity, librarianship comprises the sum total of actions directed toward goals desired by others who themselves are not engaged in performing these actions, although they may be involved in them." (p.42)

Professional knowledge is needed in any organization to achieve its goals and to explain the relevance of operations and predict their outcome. Scientific theory can assists in the study of library reality by a deductive explanation of facts and their patterns. It "offers an intelligible, systematic, conceptual pattern for the observed data." (p.43)

Although librarians can use their own data and concepts developed in other fields, they lack the organized body of empirical properties and relations: they equate the subject of analyzes with recorded observations, ignoring epistemic questions they cannot answer.

---- 1973b:

"The interdisciplinarity of librarianship . . . must be stated within the problem area of librarianship." (p.135) The "specific problems involving the goals and principal concerns, activities, and basic properties and functions . . . are being grasped and studied from characteristic vantage points . . . judged appropriate at the time." (Ibid.).

"Librarians engage in an activity which has as its goal effective access to recorded knowledge and as service to those seeking such access." (p.127) In "these bibliothecal activities librarian encounters the structural and functional properties of these objects and the need to control them." (pp.127, 129)

Documents are considered as objects, contents with potential use. Librarians must understand the properties of the bibliothecal situation and translate them into a functioning system. Librarianship can be viewed as a professional activity and as a field of study.

The interdisciplinarity of librarianship can be presented in a form of three Van circles: (1) goals, concerns. activities, properties and functions, (2) basic research, specific goals and methods of inquiry, and (3) subject knowledge and technology, levels and modes of dependency.

RAY. DONALD. 1989:

"The library role of the community college library dwindles as students learn testable data instead of a coherent body of knowledge. Only by resisting these powerful reductive pressures can library use be preserved as a meaningful way into subject content rather than a mere set of procedures." (p. 147)

RAYWARD W.BOYD, 1983a:

The author discusses the relationships between librarianship, bibliography, documentation, library science and information science.

(a) Modern librarianship emerged in 1876 as a professional occupation utilizing newly invented tools engineering techniques and managerial organizational structure.

(b) Scholarly bibliography today includes descriptive, historical, analytical or critical study of material as complex, cultural and intellectual artifacts. Its focus on books differs from librarians preoccupation with functions and operations of libraries.

(c) Documentation was motivated by desire to create a universal index of all documents that constitute recorded knowledge. It focused on needs of specific scientific or technical organizations, based on mathematical models and use of computers.

(d) Library science, dates from the late 1920s and focuses on standards of scholarship and research in the values and procedures of libraries, using methods of social sciences or history.

(e) Information science emerged from documentation in 1968, concentrating on machine-stored retrieval of data in documents.

There is a disciplinary continuum between librarianship and information science with differences seen only at the ends of that continuum. Both disciplines are committed to finding solutions to the same problems.

---- 1983b:

Rayward reviews the development of relationships between librarianship and information research as expressed by some leaders in these two fields.

Leibnitz in the 17th century searched for universal characteristics, devised a calculus of reason and planed an encyclopedia that would unite all arts and sciences.

Jewett, Sayers and Ranganathan contributed to the issues of bibliographic description and classification but without using a scientific approach.

Kochen followed Leibnitz's utopian interest in the unification of knowledge, concentrating on wisdom as the product of a system. Shera defined a library as a social agency involved in social communication and as a humanistic institution providing access to library resources, based on a theory of 'symbolic interactionisms.' Patrick Wilson focused on bibliographic research and development seen as a practical 'product and process' objectives.

Kochen and Shera approaches are complementary in their misunderstanding of rivalry between library and information scientists, Wilson considered both fields as a single but heterogeneous discipline.

---- 1983c:

Much of librarians knowledge is empirical, ahistorical and pragmatic. Attempts to dissociate library education from library practice were based on the perception of librarianship as a profession subject to academic scrutiny. However, many of library educators by being insufficiently academic, weakened the scholarship and profession of librarianship.

---- 1986:

Waples distinguished between (a) interdisciplinary fundamental research to provide coherent system of relevant abstract principles, and (b) applied research concentrating on service-related studies of effectiveness of library operations. To him, reality of library science is not in the books but in the philosophy of library.

Today's dilemma is a weak research in library schools when it is most needed. It focuses more on the criticism of present research rather than on developing new approaches, with library faculty intellectually isolated from other departments.

We are now when we were at the times of Waples preoccupation with reading and library effective access to recorded information. Following Waple's viewpoint, library science could simply be viewed as a scientific approach to library problem, focusing on research in generation, storage, access, dissemination and use of information.

REDDY, K. SIVA, 1970:

Philosophy of librarianship is defined as " a body of knowledge and beliefs that supplies basis for determining solutions to problems facing various types of libraries." (p.82)

The authors lists four approaches to the definition of library philosophy, based on Rao's classification: (1) practical, action, (2) deductive, organismic, (3) inductive, evolutionary, naturalistic, and (4) social, reflexive.

"Different philosophies [of librarianship] have been developed because librarianship is carried under different circumstances. The philosophy also differs with the personalities of individual librarians, as well as [with] the differences among human values. The diversity of philosophies of librarianship is desirable because it brings interesting thoughts and actions in librarians as a profession, and contributes to its dynamic and challenging nature." (p.84)

REES, ALAN M., 1964a:

"The so-called schism between library science and information retrieval has been grossly exaggerated . . . we are considering nothing more than the merits of alternative means of achieving common ends." (p.200) "The avowed aim of librarianship is to provide documents which contain relevant information, or in some libraries the information itself. Likewise, the advocates of mechanized retrieval systems offer . . . relevant documents (Ibid.)

"The principal issue facing librarianship relates to objectives . . . the essential difference between librarianship and the newer concepts of information handling relates more to the type and extend of information services offered to the user than to the techniques employed to describe, store, and retrieve documents." (p.201)

---- 1964b:

"Information is not knowledge." (p.4289) It is a fallacy to assume that more information is better than less; people already have more of it rather than less. The problem is not in storage and retrieval but in its evaluation and interpretation. "Much of the available information is meaningless, inaccurate, or irrelevant . . . computer retrieval system has little more to offer than GIGO (Garbage In, Garbage Out)." (Ibid.)

REICHARDT, GUNTHER, 1978:

The author criticizes library science for departing from the concept of a librarian as a librarian, by focusing on collection of information and data rather than on literature and titles. The division of the field into subsections resulted in a decay of library theory.

Reichardt discusses different contemporary interpretations of library functions, in the context of past philosophical approaches that are still relevant: (1) The contemporary Babylonian Constructors of the Tower of Babel focus on architecture of information systems, data banks, program packages, and classification systems. (2) The presocratic philosophers of today consider evolution and change as an escape into the library past. (3) Modern Pythagoreans express value of libraries in figures and statistics. (4) The Sophists study library goals by means of commissions and experts opinions. (5) The Socratics advocate a dialogue with users and superiors to find right solutions for individual cases not for the world at large. (6) The Aristotelians search for substance in a computer. (7) The Peripatetics discuss problems in speeches and conferences. (8) The Scholastics authoritarians aim at absolute control and validity, the axiomatic often unrealistic theories.

"This decay [in philosophy of librarianship] was caused by changing library principles into intricate general concepts, so that library science itself created its own crises. The more critical analyses of the current situation are necessary, whereby knowledge of the borderline cases is also important. In this way, library science is transformed into a laboratory science revoking all utopian and abstract ideas and hypotheses that cannot be proven." (p.343)

REITH, DAVID, 1984:

Historically the library was always a holistic agency of a society, defined by three parameters:

(1) Society and its institutions. Society is characterized by communality of purpose, conduct and interest. Culture is expressed by technological, sociological and ideological value systems. Institutions link society with its culture. The library

itself has no purposeful mission but serves as an interpreter of societal changes.

(2) Meeting social needs, library performs a number of distinctive functions. (a) Acquisition is a repository function with archival responsibility to guard graphic records. (b) Reference considers information as an economic commodity to be consumed, exchanged circulated and bibliographically controlled. (c) Educational function calls for literacy and democracy. (d) Library's social advocacy is manifested in marketing library resources for nonprofit objectives by promoting reading, providing outreach services and services for special clientele.

(3) The destination of information and knowledge: the library is responsible for procurement and transfer of information for advancement of society's culture.

REPO, AATTO J., 1989:

Economists define information as a phenomenon that reduces uncertainty by exchange of value. Information is defined as a market-product-public good-service. Economics of information is considered either as (a) analysis of the process that produces, diffuses, stores and use information, or as (b) services of inquiring, communicating, decision-making, and problem solving.

Different views express different aspects of information. (a) As public good that conveys benefits directly to an individual with no interdependence in consumption, information provides collective accrual of benefits to the society. (b) As a product and its content, the gap between information content and its product is unavoidable. (c) Treated as money, information is an exchangeable good in the market. (d) As a 'value-added process' value of information increases when it is organized. (e) Cognitive approach studies the dynamic of thinking: what is knowledge, how it can be represented or transformed between people, what is the use of information in communication, and its role in decision making processes. Here, information is valued for its contribution to learning, appreciation and control.

Machlup maintained that (a) stock of knowledge or its use can't be measured or compared, (b) flow of knowledge can be quantified and appraised in terms of factors such as supply and demand, cost of input/output or the extend of information flow, and (c) value can't be assigned to information because the evaluation can't be done prior to individual having that information.

To date none of the economic approaches was fully successful in producing practical means for measuring the value of information. Some generalizations include: (1) information reduces uncertainty defined in terms of probabilities, (2) need for the idea of perfect and optimal information in economic analysis, (3) definition of the role of learning in the use of information, (4) dual approach to practical value as (a) an exchange value of information products based on classical economy, or (b) a value-in-use information based on cognitive approach. And finally (5) a distinction should be made between expected and perceived value.

These approaches do not include important philosophical values (e.g., ethical or social) because "in practice those values can only be studied through individuals and their importance is reflected in the value-in-use statements of individual information user." (p.81)

RICE, JAMES, 1986:

Predictions that reference service will soon become obsolete are based on the assumption that technology will compromise the reference function: However, the opposite is true: the library automated services increased reference librarians' role as instructors in the use of these devices and in assisting formulation of search strategies. Librarians act more as information consultants than decoders of filling rules in the past; technology enhanced the professional role of librarians in focusing on assisting the patron in the use of secondary sources. The intermediary role of reference librarians declined only in highly specialized libraries.

"Library is the most logical place where three important ingredients can be brought together: a large, diverse collection of databases, cost saving to users (who won't need to purchase either the databases or the equipment to access them), and the availability of the information specialist who can assist, consult, or teach users. " (p.19)

RICHARDSON, E.C., 1927:

The philosophy of librarianship is an inquiry into real nature and meaning of librarianship, its purpose to connect books with readers, and its function to help in the reading process.

Philosophy of business is a part of the library philosophy since library business involves knowledge, books and persons needed in servicing its clients. However, there is a danger of overemphasizing the business side of the operations.

The essence of librarianship is formulated in a form of questions and answers. (1) What is a library? A collection of books for use, connecting the user with knowledge in the book. (2) What is a book? A quantity of recorded knowledge and their storehouse created to meet the needs of the reader. (3) What is a person? A thinking, knowing individual who stores his thinking, learning or knowing in his memory in a form of information or knowledge. (4) What is knowledge? It is a metaphysical reality in the mind of the reader and a commonsense image of the microcosm of a real world; a cornerstone of librarianship.

Thus the library is a sum total of recorded ideas of all people, its classified collection represents a macrocosm of reality, the memory of society and of a corporate personality.

In a modern approach everything is reduced to energy; the book is seen as storage [a battery] of intellectual energy, knowledge as the power, a real intellectual energy. The object of learning is to increase the energy of personality (i.e., not a knowledge for knowledge sake). Library service is to help the patron to help himself (in the past patrons knew the title and expected 'over the counter' service; today they ask for information). Knowing books is more important that knowing methods. Philosophy is needed because thinking come before action and knowledge before business.

RICHARDSON, J.V., 1992:

This is a biography, bibliography and evaluation of Pierce Butler influence on American librarianship.

ROBERTS, ANN F., 1985:

In 19th century academic librarians were professors of books, scholars committed to humanistic values, and generalist cooperating with classroom teaching faculty.

The 20th century whiteness a shift from humanistic values and centralized knowledge to the social sciences, scientific research and technological applications. Academic librarians become bureaucratic managers of information, networks and systems. Librarians' role is determined by (a) the sociological focus on process, and position-determined power, (b) psychological differentiation between the roles of the reader and manager depending on individual personalities, and (c) political and leadership in producing social changes.

Each of the approaches creates problems: some of the 19th century ideals are obsolete, while 20th century bureaucratic model is not suitable for an academic library faculty. The solution is seen in a synthesis of the two views: managers should eliminate bureaucracy and restore the 19th century vision of librarians as teachers and defenders of democratic values.

ROBERTS, JOHN W., 1987:

"There are two strains to archival theory. One strain is archival but not theoretical, and deals with the practical, how - to, nitty-gritty of archival work; this is the responsibility of archival clinicians. The other is theoretical but not archival, and is concerned with the historiography; this is an endeavor not for archivists as archivists but for archivists as historians. This leaves very restricted territory indeed for the archival theorist qua archival theorist." (p.66)

"Archive per se is a fairly straightforward, down to earth service occupation; it is not a library science, and it is not to be confused with the cultural and historical treasures held by archival repositories." (p.74) The archivists must be familiar with procedures and technology, ethics of the profession, its history and its records. "Everything else is either unnecessary or will fall in place . . . without the mediation of a priesthood of theorists." (Ibid.)

ROBERTS, H.V. MOLESWORTH, 1941:

"The librarian, in a sense the custodian of the public mind, with infinite possibilities of lasting good or harm, is bound to acknowledge a someting-more-than-intellectual-or-moral, in a word a spiritual element in his work and life." (p.104)

Librarians' reaction to religious issues must be (a) absolutely honest, (b) above social, political or religious prejudice, (c) impartial and fair, and (d) "be capable of envisaging a philosophical unity which would break down all the barriers." (Ibid.)

ROBERTS, NORMAN, 1975:

The author proposes definitions of fundamental concepts in library and information science, and discusses in detail the relationships between different interpretations of the term 'demand' made by the users upon library and information centers.

He suggests, that these definitions will increase the explication of the 'demand' vocabulary, provide more systematic approach to the individual patrons demands, and reduce the confusion in the use of terms such as 'need', 'want' and 'requirement'.

---- 1976:

Considerations of information science as a social discipline requires that the models of information processes be more general, to include a range of new theoretical and applied studies. "It is the practicality that gives to information science its significance and meaning, and gives to theory its purpose . . . [at present] the definition of information science is what information scientists do." (p.256)

Methodologies of information science must include the explanation of behavior of individuals, who are the raison d'etre of information services and theories.

ROBERTS, N., T.D. WILSON and D.ELLIS, 1988:

The interest in industrial and commercial information issues relates to information technology. The approach is from the possession of information sources to business information users viewpoints - not from the information needs of organizational users of information.

The interpretative role of a librarian is ethical, it requires filling gaps in corporate knowledge, and assuming responsibility for accuracy and relevance of information and its interpretation in terms of the business needs and benefits. Packaging and presentation of information together with preferential interpretation and evaluation 'adds value' appropriate to expected decisions.

The spread of information technology ensures an interest in the information by suppliers and consumers of information, and requires a holistic view of business information and its organizational environment. The business information education should adopt user/information rather than source/library perspectives.

ROBINSON, CHARLES, 1992:

The author is critical of the present attitudes toward electronic book technology by librarians and their professional organization. Instead of thinking about the adaptation to the future needs of the library users, which will be created by new technology, librarians spent time, money and energy in maintaining a status quo of their collection development, processing and services, worrying about the professional image, and being involved in social issues and moral causes. Yet the new electronic book will have its own problems and challenges, including the assistance in their use. "The electronic book world will create new jobs for us if we play our cards right." (p. 52)

ROBSON, ANN, 1976:

Changes in a library mission were not created by the librarians or by the misinterpretation of the library original founders intentions, but by the changing meaning of concepts such as 'service', elite', or 'benefit'.

"As the concepts have changed, the connotations of words have changed. To understand the history of libraries, and their problems past and present, their originators and origins must be kept in their historical context." (p. 204)

As Shera pointed out (1972), by the end of the 19th century libraries changed their policy from centrifugal to centripetal approach. These changes can be interpreted better by "understanding of the nature of knowledge and the working of the human mind, of the nature of society, and consequently of the reforms needed to further the improvement of mankind." (p.191)

The important intellectual and philosophical changes were initiated in 1750-1850 period of Industrial Revolution, by shifting the approach to social problems and from the deductive to inductive methodology. The changes were advocated by Francis Bacon call for observation, collection of data, and their inductive analysis. This view challenged traditional Descartian deductive philosophy arguing from the hypothetical premises to their logical conclusions. John Locke's tabula rasa opposed the concepts of innate ideas and intuitive knowledge, offering new possibilities for education to change the individual and society.

Libraries in the eighteenth and nineteenth century were expected to provide knowledge to all people, although many of them were illiterate. The social reformers believed that instead of waiting till most people can read, libraries could encourage learning and provide access to those who could benefit from it.

"One cannot accuse the libraries and their sponsors of being exclusive because they did not reach out and drag to their bosoms all men and women, even the illiterate." (p. 200)

The past elitist patronizing of working classes, their moralistic belief in the perfectibility of people through education, the trust in the power of knowledge, the library role in education and its support by government - all must be understood in the historical context. "To remake them in our own image is to misunderstood both them and ourselves." (p.204)

ROCHELL, CARLTON C., 1987:

The library mission has changed little in the last 2600 years. Librarians continue to collect, organize, access, preserve, share, advise and be impartial in their services.

Communication means sharing, but when mediated by machine it loses the human element. Computer centers are indifferent to the content of information not because of neutrality but because of lack of interest in it. Some technological capability is not matched by a need for it. It increases number of resources but it also creates the very problem of the information explosion, it attempts to solve.

"We must be advocates . . . [and] activists. We must defend not only the right to perform our traditional mission, but the values that are intrinsically part of that mission. Questions of access, of censorship, the preservation of knowledge, and the expression of minority opinion will all become more complex and more threatening to our society in the decades to come." (p.48)

RODEN, CARL B., 1923:

The motto of the American Library Association that the library mission is to supply the best books to the largest number at least cost "is proclaimed in words that click like an adding machine." (p.491) "If that is really the creed of American librarianship then . . . it is a small wonder that we have achieved no more than the quantitative and horizontal results implied in those three shopkeeping superlatives, and that we stand today in the placid esteem of our communities somewhere between the tulip beds and monkey cages of the parks and the compulsory processes of the public schools." (p. 491)

"Books are spiritual goods; they are imponderables. To attempt to apply quantitative standards to their distribution or to the measurement of their power is futile . . . [these methods are] in the realm of philosophy. There is no such thing as a common book, thought there may be many readers common to one book." (p.492)

The mission of the librarian is not only to supply the best books to the greatest number at least cost, "but to bring together the right book and the right reader - at any cost!" (Ibid.)

ROEDDE, W.A., 1957:

Librarians today are like physicians of five centuries ago, struggling to develop their own skills, ideologies and ethics. However, today: (a) librarians do not differentiate between professional and clerical tasks, (b) have no philosophy and (c) lack common ideology. The result is a vacillation of public libraries' mission between education and entertainment and hazy ethics in selection and services.

ROGERS, A. ROBERTS, 1984a:

Comparative librarianship is a method of inquiry focusing on a systematic analysis of library development, practice and problems in historical, geographical and political contexts. It includes (a) cross-cultural comparisons beyond mere juxtaposition of data between the societies, and (b) explanation or discussion of observed similarities and differences.

International librarianship consists of activities among individuals and institutions of more than two countries, to promote, establish or evaluate library services. The two types of librarianship are related but not identical concepts.

Libraries can be divided into: (a) democratic, political institutions, based on local government (e.g., USA), (b) highly centralized government-controled, discouraging local initiative; (e.g., France), (c) centralized with severe economic constraints (e.g., Spain), and (d) political, focusing on public libraries implementing government policies and promoting literacy (e.g., USSR).

---- 1984b:

Philosophical inquiry is an expression of curiosity. Most writers in the philosophy of librarianship concentrated on issues of library purpose, few attempted to develop philosophy of librarianship in terms of some aspects of philosophy proper.

Rogers review of philosophical aspects of librarianship can be arranged by its focus on specific viewpoints of librarianship.

(1) The emphasis on the librarians profile is concerned with tolerance and professional enthusiasm (S.W. Foss).

(2) Humanistic viewpoint stresses the value of reading (F.C.Sayers, H.Haines and L.C.Powell).

(3) Sociological viewpoints focus on (a) society and library obligation to individual (A.Broadfield), (b) socializing and

individualizing roles (L.Martin). (c) social responsibilities of librarians. (D. Berninghausen); (d) selection of books based on patrons wants (Putnam); (e) selection based on community needs (H.Goldhor).

(4) Psychological viewpoint addresses (a) primacy of individuals' needs (D.J.Foskett and ALA Library's Bill of Rights), and (b) library as a social agency (M. Dewey).

(5) The political science viewpoint deals with: (a) library as a reconciler of group conflicts (J.C Dana), and (b) mediation of group interest (J.Z.Nitecki).

(6) Religious view develops Christian perspectives (R.A. Burke).

(7) The philosophical viewpoint covers a number of issues (a) importance of epistemological concept of knowledge to individuals (E.C.Richardson), (b) five laws of library science (S.R. Ranganathan), (c) call for professional philosophy of librarianship (P.Butler and J.P.Danton), (d) librarian as a policeman of books (J.G.Ortega and N.M. Krupskaia), (e) social epistemology (J.H.Shera), (f) library philosophy as reflection of society's philosophy (M.Kolitsch), (g) librarianship as a metascience focusing on ideas about the nature (A.Kaplan), (h) distinction between scientific materialism and humanistic, immaterialism (H.C.Wright); (i) metaphysical model of metaphorical metalibrarianship (J.Z.Nitecki); and (j) model of human linguistics in communication (V.H. Yngwe).

(8) Ethical and esthetic viewpoints are concerned with: (a) individual's inner aesthetic, emotional and moral attributes

(A.E. Bostwick), and (b) librarian's neutrality (L.R.McColvin), D.J.Foskett),

(9) information science viewpoint studies: (a) information science as metascience (A.Debons), (b) issue of meaning in information (C.E.Shannon, W.Weaver, B.J. Whittemore, M.C.Yovits), (c) structural, analytical and semantic levels of information (K.W.Otten), and (d) issues of knowledge, understanding and wisdom (M.Kochen)

ROGERS, SHARON J., 1979:

Four theories of motivation related to library instruction are discussed. (1) Association theory is based on trial and error reinforced by 'need reduction' and stimulus response concepts. (2) Cognitive theories focus on socially learned characteristics such as goals, intentions, expectations, plans, curiosity, ability to organize; all directed at rational, conscious decisions about one's behavior. (3) Achievement motivation stresses one aspect of cognitive theory, the tendency to achieve successes and to avoid failure. (4) Humanist theories postulate seven sets of needs in a hierarchy (physiological, safety, love and belonging, esteem, self-actualization, desire to know and understanding, and esthetic needs)

Each of these theories dictates different means and methods for influencing human behavior. In education however all are linked together in a pragmatic philosophy concluding that no one single theory explains all types of motivation.

Librarians' contribution to the academic community through bibliographic instruction in the classroom is essential.

An appeal of the class-related instruction is that many of the motivations may be better controlled within a classroom setting, including the creation of a context and need for the library instruction.

ROHDE, NANCY FREEMAN, 1986:

Information varies with contexts: (a) in user studies it denotes factual data, physical objects like books, advice or channel for conveying messages. (b) Within library and information science, information is considered as a structure of texts that can change the image configuration of its recipient, or as a stimulus reducing uncertainty. (c) In operational definition information is seen as a symbol with a potential meaning.

Needs, demands and wants are used interchangeable as (a) a substance, a message, and (b) as means or channels of delivery. Information need is a relative concept existing only in the individual's mind.

"The core assumption in underlying information theory is that information exists independently of and external to human action and thought." (p.60) "The value of information lies in its ability to describe reality, potentially completely, thereby reducing uncertainty and allowing people to function more effectively." (Ibid.)

New information research either focuses on situational theory that defines different needs of individuals in different situations, or studies information needs arising in work setting. The major research problem is how to link information-producing with information-seeking behavior.

ROSENBERG, JANE A., 1994:

In librarianship the terms 'administration' and 'management' are often used as synonyms, although the term 'management' of libraries relates to "general theories and procedures for controlling the work of organization." (p. 373)

The field is influenced by the works done in sociological and psychological studies of human relations and motivation, and in the economics, political science and statistical approaches to the organizational objectives in planning, organizing, staffing, directing and controlling library operations.

ROSENBERG, VICTOR, 1974:

Rosenberg perceives information science as a search for understanding the nature of information and its interaction with people. Kohn concept of a paradigm provides a world view for examining environment, it is a useful metaphor that helps in organizing different perceptions of the world. Changing paradigms indicate a scientific revolution; the introduction of computers represents such a change. It provided a new look at the world and becomes a cultural phenomenon, called 'gestalt of computer.'

It is important to distinguish between an understanding of information science and the interpretation of practical tools for mechanical handling of information; human processing of information differs from machine processing. "Human values, and human dignity, are often trampled upon by information systems . . . the pathology and the unfortunate consequences of information systems are inherent in the philosophy underlying their design." (p.267)

Information science must shift from its deterministic approach to a more holistic view by considering computer as a historical accident rather than as a scientific organizing principle. More attention must be paid to social, cultural and spiritual aspects of communication, admitting the existence of the intuitive, the subjective, and the experiential viewpoints.

The changing information paradigm, suggests that the research should concentrate on "the examination of conceptual change in the field, i.e., it will look at the concepts forming the basis for research. Once new concepts are developed new understanding of phenomena will follow." (p.268)

ROSENBLUM, JOSEPH, 1981:

The two library cultures that do not share common values and concern are expressed by the views of: (1) technocrats who stress innovations, quantification, efficiency, and cost-effectiveness, and (2) mandarins with humanistic background who prefer tradition over change, focusing on knowledge, quality scholar-teachers, preservation and organization of records.

"The profession, like society as a whole, will be richer if it remains pluralistic rather than monolithic." (p.70) "The two cultures challenge librarianship not to choose between them, not to create a synthesis, but to allow for peaceful and productive accommodation." (Ibid.)

ROSS, CATHERINE SHELDRICK, 1987:

Recently, metaphors become a center of philosophical concern about meaning and epistemology, and as a way of understanding and experiencing phenomena in terms of other experiences.

In the 19th century two metaphors were used by librarians to discuss the issues of books and reading: (1) "reading is a ladder': it is the responsibility of the reader to climb the reading ladder by reading for information, and (2) "reading is eating": swallowing the content of a book will have a predictable effect on the reader.

"Within the conceptual frame provided by the metaphors of ladders and eating, it is easier to tell the story of active text and passive reader." (p.158) "Conversely, the metaphors . . . make it harder to tell other kind of stories - stories of active readers whose activity of making meaning from black marks on a page occurs in the context of the readers' own lives. In this second kind of story, the focus of interest shifts from the effect of text on readers to the relationship between the readers and the text. Now readers - not librarians, teachers or other experts - become the judges of the value of materials, and

readers make this judgment in the context of their own lives."
(Ibid.)

ROSZAK, THEODORE, 1986:

The major argument of this book, relevant to the philosophy of librarianship and briefly summarized here, is an insistence that there is a vital distinction between what computer does when it processes information and what mind does when it thinks. Computer can be taken apart, analyzed, measured and clearly understood, which is not possible with brain. Computer scientists subordinate ideas to data, thus identifying information with knowledge, by following empirical philosophy.

Empiricism detached itself from the medieval absolutism which had no need for information, since all knowledge was already known a priori. In the period of geographical discoveries philosophers introduced the concept of intellectual discoveries based on inquiry controlled by objective observation of nature, avoiding assumptions and presuppositions, thus creating the concept of facts.

This approach allowed for questioning the old ideas, by examining the notion of ideas themselves. The skepticism about inherent ideas liberated intellectual energies of the Western society. This lead to the reductionistic conception of knowledge, undermining the role of imagination in creating ideas, and of ideas in creating knowledge, raising the questions: 'Which is more' real', things or the ideas about the things? Does knowledge begin in physical senses or in the mind?'

It is a paradox to realize that any viewpoint, including empiricism, is itself an idea about knowledge or experience not based on facts. Similarly a computer is an idea about numbers, classification and relations.

The mind thinks with ideas, not with information. The relationship between ideas and information is generalization. Generalization can be of two kinds: when confronted with a large number of facts, the mind generalizes by searching for a connecting pattern of relations between these facts. When there is a scarcity of facts, the mind expands the existing pattern, to make up for the gaps in the knowledge.

Thought is based on an interplay between experience, memory and ideas. Experience is a raw material from which moral, metaphysical and religious ideas are fashioned by the mind in search of meaning. Memory is a register of our life experiences, an invisible and uniquely interrelated pattern of experiences, the computer's memory consists of discrete entries, separately arranged and always subject of total recall.

The computer developed complex programs out of primitive building blocks, by rapid manipulations of a few basic logical relationships, based on binary arithmetic and physical stop-go traffic of electrons through semiconductors. Hence there is a limit of computer intelligence determined by these basic rules.

The role of the library, especially a public library, is to provide intellectual sustenance to our society. Libraries have always followed reference sources, including the use of the computer. By virtue of their training and experience, librarians know when not to use the computer, by searching beyond available immediately resources; hence the computer supplements other sources, it does not replace them.

ROTHSTEIN, SAMUEL, 1968:

Present code of ethics should be abandoned; it is empty of meaning. The profession needs instead a code of practice, a statements of 'do's and don'ts of professional conduct', and a declaration of principles.

The code should define the professional ethos of librarianship in terms of (1) values, beliefs and goals: commitment to reading, taste and intellectual freedom, (2) by identifying special abilities of librarians to develop, arrange, describe, serve and operate library collections, and (3) by describing issues, tensions and dilemmas of the profession.

ROVELSTAD, MATHILDE, 1974:

The socialistic librarianship can be understood only in the context of the communist political theory, which aims at a creation of an educated society, loyal to working class and socialism. The immediate goals are to abolish educational monopoly of bourgeoisie class, to eliminate cultural distinctions between urban and rural population, and to abolish differentiation between manual and intellectual work and to bring equality to women.

The library is an integral part of socialistic educational system responsible for implementing the Marxist-Leninist theory in collection building by increasing political and ideological consciousness of the individual. This is accomplished by open access to selected collections, and by researches conforming to socialistic principles, which rejects neutrality and objectivity as a non-scientific, false, bourgeois theory. Readers' psychology is used to influence the reader's needs; the bibliography is a method of guiding the patron to selected literature.

"Socialist librarianship differs from librarianship in a pluralistic society . . . in its total dedication to the ideology and the service of the State's political, cultural, and economic goals . . . intellectual rigidity allows individual freedom only as long as this freedom does not interfere with party goals." (p.330)

---- 1976:

Werner Dube (1975), a socialist library educator reviewed Shera's Foundations of Education for Librarianship (1972) as a professional ideology expressing political mission of American libraries to support its pluralistic society. Shera, according to Dube, ignored the Marxist scientific-rational approach, and although pretending to be radical, offered a conservative view, defining librarians' function in society in terms of the capitalistic permissive pluralism. Rovelstad summarizes Dube's argument as follow:

"The American librarian's norms of conduct are derived from a pattern of society that is abstract and not historical. This way of thinking conforms to the class interest of a monopolistic system which declares its own profit oriented interests as those of mankind." (p.295)

Dube questions the notion of 'right book for the right reader' in the profit oriented society, and maintains that social role ascribed to American librarianship is misleading because it is based on abstraction, not reflecting existing social conflict.

RUBANOWICE, ROBERT J., 1975:

The interests of an intellectual historian of ideas is transdisciplinary, extended beyond traditional academic disciplines, and it rejects consideration of history as a separate department of knowledge. It also criticizes M. Dewey's hierarchical arrangement of books on the shelves as insufficient in the period of multiplicity of permutations and combinations of ideas.

The classification principles most appropriate for intellectual history ought to be exhaustive, analytical, pre-coordinate and focusing on facet subject cataloging.

The author endorses (1) classification of subjects; (2) Ranganathan's Colon Classification for its rejection of a physical book as the constituent unit of a traditional, hierarchical focus on genus and species; (3) analytical cataloging of parts of documents for facilitating retrieval of documents needed by the patron; (4) a pre-coordinate system which provides and correlates facets of information to facilitate information retrieval, and (5) exhaustive cataloging as a possible index of all books in the library.

"It is the responsibility of each of us concerned with the philosophy of librarianship to help contribute to the development of ever more sophisticated classification systems, parallel to and even in advance of electronic and technological breakthroughs." (p.270)

RUDD, DAVID, 1983:

Rudd questions the consideration of Popper's World III as the epistemological bases for information science because it neglects the content and context of information. This epistemology excludes human knowing subject, yet it cannot do without that knowing subject. Popper considers objective knowledge as exosomatically recorded and currently accepted as correct. The essence of a book is its potentiality of being understood.

"If Popper's third World model is accepted, then information is seen to inhere in things (books, problems, theories, etc.) which people may or may not understand. This is essentially passive conception of information - and one which produces an information science that relegates the production of information to very low priority." (p.101) "On the other hand we have a much more dynamic concept of information which says that it is meaningless to speak of information divorced from people." (Ibid.)

---- 1984:

Rudd restates his objections for applying Popper's model to information science by pointing out to: (1) Popper's rejection of 'truth' and (2) impracticability of his notion of logic of falsification, since criteria for determining what is knowledge are negotiated by human beings; each science develops its own paradigms of 'commonsense theories of knowledge'.

Rudd concludes that Popper's model with its uncompromising fallibilism, ignoring social context of information is negative and not recommended for information theory.

RUDD, MARY JO and JOEL RUDD, 1986:

"Contrary to a widely held belief, it is probable that library users rarely experience information overload. The erroneous belief that users are increasingly experiencing overload is a result of (1) conceptual confusion between 'information explosion' and 'information overload,' and (2) misinterpretation of the implications of research findings. A review of relevant literature reveals that information overload is likely to occur only under a very limited set of circumstances." (p.304)

RUDDOCK, JEAN, 1983:

The library is considered as an institution that can assist students in a transition between the two currently disputed approaches in Great Britain, (a) the taken-for-granted teacher's and textbook authority, and (b) the teaching involving independent studies.

The library comprehensively represents total knowledge. It may offer students the social independence by cultivating responsibility and intellectual capacity to think for themselves. The approach facilitates moving from dualistic reasoning that assumes clear distinction between right or wrong answers, to contextualistic relativistic thinking based on testing the validity of various claims to knowledge. It provides students with power, not just instrumental competence, to be served by knowledge not ruled by it.

- S -

SACKS, JOHN R., 1986:

Changing technology requires that "the roles of the library and the computer center will need to shift from those of a central repository holding information and technology to that of sleuths and integrators of disparate information sources." (p.535)

Library patrons, with their own computers, supplanted the resources of library, and become librarians themselves. They want immediate access, focusing on results rather than procedures, and ask for a direct, two way communication.

The role of a librarian as a sleuth involves educational, emotional and philosophical shift from owning, cataloging and

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lending library resources to becoming personal investigators of electronic data banks and providing access to them.

The new environment raises issues of: (a) the knowledge of access to different sources, (b) systems of referring and reviewing means of electronic journals, (c) methods of constructing historical records, and (d) ways of avoiding an economic disparity between 'haves' and 'have not' patrons.

SAKSIDA, M., 1992:

The philosophical implication of development in information science is discussed in the context of human ability to absorb the expansion of information technology in areas such as intelligent decision support system, associative processors, molecular processing, connectionists factions, and neural work.

SALTON, GERARD, 1975:

The concept of a dynamic library (a) will be based on local needs for information, (b) reinforced by patrons' feedbacks and cooperation in formulating library's operational policies and procedures, (c) will modify basic input during retrieval processes, and (d) will be based on network cooperation in processing and acquisition of material.

SARACEVIC, TEFKO, 1975:

"Information science emerged as the third subject, along with logic and philosophy, to deal with relevance - an elusive, human notion. The concern with relevance, as a key notion in information science, is traced to the problems of scientific communication. Relevance is considered as a measure of the effectiveness of a contact between a source and a destination in a communication process. The different views of relevance that emerged are interpreted and related within a framework of communication of knowledge. Those differences arose because relevance was considered at a number of different points in the process of knowledge communication. It is suggested that there exists interlocking, interplaying cycle of various systems of relevances." (p.321)

---- 1991:

The author discusses the evolution of information science, its historic origin, social role and information retrieval. "Evolution of problem orientation is discussed and a contemporary definition of information science is provided. Interdisciplinary relations with four fields are examined: librarianship, computer science, cognitive science (including artificial intelligence) and communication." (p.5)

SARACEVIC, TEFKO and ALAN M. REES. 1968:

Information science addresses issues of behavior, properties and information transfer in information, communication processes and tools. Basic information science is theoretical, applied information science focuses on developing information systems such as indexing, classification, file organization, and analysis and search strategy of thesaurus applicability in practice.

Librarianship contains some elements of science, art and occupation. It has a historical identity, philosophy, code of ethics and practice based on scientific research. It satisfied social needs by developing an educational and economic system, linked with information science through its engineering application of technology to library operations.

Information technology gradually changes library procedures. To innovate new procedures in an orderly and logical fashion, a scientific base is needed in addition to technological approach. " A considerable amount of scientific work is being performed in information science which has potential implications for library practice. (p.4100) "Paralyzed by decades of philosophical and literary argumentation, librarianship has much to gain from information science. The insight, tools, and methodologies of mathematics, logic, statistics, linguistics, system analysis, behavioral sciences, etc. have much to offer to librarianship. Flippantly, it is possible to suggest that we have tried formal philosophy, sociology, and technology, so why not try science?" (Ibid.)

SARGEN, SEYMOUR, 1993:

In their role as 'gatekeepers' librarians contribute to the regulation of ideas and information in society, by providing a forum for the exchange of ideas representing the views of the intellectual community. In this context the author maintains that extreme views such as e.g., creation science, cannot claim 'equal time' with science, but should be included in library collections as views questioning the very status of science.

Librarians are not in the position to compare statements such as 'facts', 'information' or 'truth' with reality. "Rather, the facts and the truth simply are whatever survives a process of free and open inquiry." (p.15) Therefore the provision of free and open inquiry is a basic librarian's responsibility.

SATIJA, M.P. and RAVINDRA N. SHARMA, 1986:

Ranganathan was a thinker, planner, educator, administrator and writer. His work is based on the Vedic premise of Ekavakyata, the unity of knowledge. His normative principles of library science are borrowed from scientific method and adapted to librarianship. The laws were inferred from actual behavior.

The Five Laws of Library Science (1931) constitute the philosophy, norms and guiding ideas that became the bases for his future writings. Colon Classification (1933) is a bibliographic classification of self-perpetuating schemes, giving coextensive class numbers of any depth required by a document. Prolegomena to Library Classification (1937) provides a theory of library classification. The Classified Catalogue Code (1934) is an international code with local variations.

Ranganathan's overall contributions were more as a leader in the field than an inventor, as an organizer rather than a creator.

"Thought the theories he formulated are far from being faultless . . . his reputation rests four square on his methodology. By establishing the science of library science he placed its future in the safe hands of the succeeding generations." (p.134)

SAVAGE, ERNEST A., 1946:

"A man's potential library embraces all of his subjects that he might ever want ... his actual library embraced all he has access to; [and] the gap between the potential and the actual was far too wide to be creditable to librarianship." (p.77) "To lessen the gap we must muster books . . . we must advertise books in printed co-operative catalogues, and by teaching bibliography." (Ibid.) Bibliography and book content have a significant impact on readers' character and culture.

SAWYER, ETHEL, R., 1923:

Service, justice, courage, honesty, loyalty, and patience are old virtues. "The most important service for any profession is . . . not to devise new virtues (imponderables) but to demonstrate the possibility of maintaining the theoretical values of imponderables in the face of the practical challenges of result-demanding 'progress'." (p.420) "Let librarians continue to demonstrate the possibility of serving the community and preserving its personnel, of squaring service with efficiency, professional ethics with economy, and in case of conflict, let us remember that our value as professional lies in being able to weight in honest scale the vital imponderables against the surface mechanism." (Ibid.)

SAYERS, FRANCES CLARKE, 1950:

It is an essay in esthetics, praising the art of reading a book as a cultural phenomenon. Librarianship is independent of education or sciences, and it should focus on propagation of good books, not affected by standards of mass culture.

"This initial impulse, this enduring faith in reading books to know them and to make them useful, has somehow been lost - not, I feel, because we are of lesser stature than our predecessors, not because, perhaps, there have been such pressures, such multitudinous forces at work upon the culture of our generation - economic, political, mechanical, and inventive - and the joyous obligation to read and to induce others to read seemed too simple a function in a world where everything and everybody were being mechanized, organized, industrialized, streamlined, geared for action in two wars, emotionally adjusted for a depression, progressively educated, and made socially conscious." (p.134)

SCANDRETT, MARION SATTERHWAITE, 1939:

The author discusses the notion of library impartiality based on the premises that (a) people are tolerant only when they are ignorant of better ways, (b) often impartiality is a choice negatively made, and (c) librarians are not sufficiently aware of social changes.

The lack of social and intellectual curiosity among librarians is evident in (a) professional literature, (b) distaste for controversy, (c) lack of interest in professional philosophy, and (d) "wavering faith in democracy . . . librarians are oligarchic, not democratic, in essence. They feel confidence in common people only when they appear individually, as suppliants before a desk." (p.399)

SCHILLER, ANITA, 1981:

The traditional library functions of collecting, storing, organizing and retrieving information for use are expanded by the use of information technology, with a shift from not-for-profit to for-profit activities. Information is considered a commodity that can be bought and sold, produced on-demand, and commercially available, raising the issues of 'free or fee' services and copyright.

The initial utilization of commercial services undertaken to enhance library services by supplementing existing services, changed the role of libraries into one of the intermediaries between different kind of information system.

SCHLUETER, R.A., 1968:

Information science "investigates the properties and behavior of information, the forces governing the flow of information, and the means of processing information for optimum accessibility and usability. It includes the origination, dissemination, collection, organization, storage, retrieval, interpretation and use of information." (p. 152)

SCHNEIDER, GEORG, 1934:

Originally, the bibliography was considered a study of mechanical writing and transcription of books, 'the writing about books.' In a broad sense it was defined as a science of books, dealing with their intellectual aspects, including history of literature and the nature of the book, the 'technical bibliography' which included history and methods of printing, book trade, library services and book collections.

In the narrow sense bibliography is defined as 'the study of lists of literature', the lists called bibliographies and their use bibliography. In this sense bibliography relates to many other disciplines. Among them: (a) to librarianship as a professional equipment in collecting, preserving and distributing books, (b) to catalogs in general by providing a link between books in different discipline, (c) to history of literature by facilitating discussions of book content and criticism, (d) to history as supplementary to its research, and (e) to philosophy by using logic and ethics in classified arrangement of publications.

"It is sufficient to state that bibliography deals with that which can be learned. We can maintain, with Kant, that it is a 'unit of knowledge organized in accordance with principles'

. . . we may emphasize its purposes. and maintain that bibliography need not have other than practical [and] social motive." (p.22)

SCHRADER, ALVIN M., 1981:

Bibliometric is a scientific study of empirically determined, quantitative aspects of recorded discourse. Its objective is to develop a theory about recorded discourses and their properties.

There is "the semantic confusion in the literature between theory and philosophy, in that pleas for a philosophy of library science are taken to be pleas for theory, and the terms are used interchangeably. Philosophy, however, is value theory and is sorted out in logic and epistemology from empirical theory, so that ideas about what ought to be and what ought to be done are differentiated from ideas about what exists in the world. Value theory is not a substitute for empirical theory, but rather . . . a necessary complement in development inquiry which links theory to practice." (p.154) "Pleas for a philosophy of library science have usually boiled down to weak attempts to rationalize the genteel empiricism in which educators and researchers have functioned." (Ibid.)

---- 1983:

This comprehensive analyses of over 1500 library and information science definitions "reveals a profound depth of confusion, disagreement, contradiction, and inconsistency over the past 100 years about the proper characterization of the domain." (p.ii)

Two methods of defining the field are: (a) empirical that assumes self-evidence of observations and concentrates on the functional aspects of the discipline, and (b) conceptual, based on an a priori, logical analysis of the contents of definitions, establishing the relationships between the meaning and the term describing the domain.

The author's own approach is formulated in the context of the general systems' SIGGS metatheory. It viewed library and information science as a system of human social practice, called 'symbolic culture accessing system'. " The domain encompasses inquiry into such problems of social practice as: guiding access, seeking access; the nature of the transmitted symbolic culture; the system context; the system surrounding; and, the interrelations of any two or more of these phenomena." (p.374)

The library 'goodness' is two-dimensional: as (a) a philosophical evaluation of the intrinsic worth of knowledge/opinion accessibility, and as (b) a praxiological dimension of instrumental worth in efficient accessibility to the specific knowledge or opinion.

The overall approach to the definition of the domain of library and information science must go beyond the empirical method, stressing scientific formulation of theoretical hypotheses, related to the social environment and logical as well as conceptual inquiry to other disciplines of social practice.

---- 1986a:

Based on the author's dissertation (1983), this essay focuses on the definition of information science. Previous conceptualizations of the discipline are reviewed in terms of the nature, content, focus, function, accessibility, retrieval, transfer, process, evaluation, management and control of information.

Many of the past definitions are criticized for their "uncritical citing of previous definitions, conflation of study and practice, obsessive claims to scientific status, a narrow view of technology, disregard for literature, inappropriate analogies, circular definitions, and, the multiplicity of vague, contradictory, and sometimes bizarre notions of the nature of the term 'information'. (p.192)

A satisfactory definition of the domain of information science must: (a) clear the relationships between library and information science, (b) be based on social practice and service, (d) define its functions, (e) specify relationships between the agent and the client, (f) recognize the primacy of mediated communication, (g) recognize the importance of the nature of the content of the domain, (h) consider the domain as a part of a system of interdependent components in society, and (i) the conceptualization of the discipline must identify scientific, philosophical and praxiological domains of research.

SCHUMAN, PATRICIA GLASS, 1976:

The library profession should be demystified by rejecting a number of myths about itself.

(1) "Institutions are neutral, and those within them must be neutral in order to be effective." Objectivity should not be confused with neutrality which is a surrender of ones believes.

(2) "Intellectual freedom is an end in itself." It is a means toward the end of a just, human and democratic society,

(3) "Libraries provide free access to information on all sides of all issues." This is a goal aimed at, in practice the library provides information on limited number of issues to some people.

(4) "Libraries are not political institutions." This is a version of neutrality myth; libraries constantly compete in a political market for funds and legislative support. (pp. 252-253)

"The future of libraries may be in our very ability to define the social responsibilities of libraries and librarians. This cannot be done in a vacuum; it can only happen if we place ourselves in a constant input-output position with others, if we begin to identify the issues, to take action, and begin to build a socially responsible information agenda. An agenda which will propel the world we know into a truly participatory society. It is one thing to provide information to people; it's quite another to help them to demand it as a right." (p.254)

---- 1987:

The essay aims at "debunking the myth of networking: they don't save money, break down library bureaucracy. or eliminate barriers between libraries." (p.33). But networking can help in simplifying operations and in improving performance standards. "By working together we can become not merely more efficient and competent, but technologically and philosophically fluent, and powerful enough to transform our libraries." (p.37) Philosophy of librarianship should shift from ownership to access and dissemination.

SCHUSTER, Sister Marie. 1977:

"Education which is real is necessarily learner-centered, it is based on learner needs and nourished learner growth. It assists the learner in the process of becoming a whole and fully-functioning person. Such education is provided best through a library-centered approach to learning [it] realizes learning as a creative process [and it] is concerned with learning as a life-long process of growth." (p.vi)

"The Library-College is an educational ideal based on the concept that the single most important instrument in the learning process is the library." (p.32) "The library-centered learning environment includes the generic book and the bibliographic way. The generic book . . . can be defined as the sum total of man's communication possibilities. It includes all media formats, subjects and levels. (Ibid.)

"A bibliographic approach to learning provides the learner with access to the widest possible range of the literature on the subject . . . thereby extending the possibilities for seeing relationships, for breadth and depth of insight." (p.33)

SEMENYUK, EDUARD P., 1982:

In discussing different definitions of information as a discipline, the author starts with the notion that scientists are differentiated not by their work methods but by the function they play in science.

Informatics is a theory of scientific information work, similar to research and science management. This field is also known as documentation or information science. It is concerned with the structures, properties of scientific information work, its theory, history, methodology and organization. The content and the communication aspects of information are excluded from this definition.

Informology is a broader, more general science of information; it aims at bringing together all areas of study in information field. It combines philosophical aspects of knowledge with concrete scientific tools, as an intermediary between philosophy and informatics. Informology is interested in information transfer, distribution, processing, transformation of information, and the status of cognitive phenomena influenced by cybernetics, general system theory, semiotics and informatics.

SETTEL, BARBARA and DONALD A. MARCHAND, 1988:

Information studies are considered as an interdisciplinary field that includes communication, computer, information and library sciences. They focus on information needs and uses by different populations, and on design, operation, management, and evaluation of information systems and services.

In general records management, behavior of users, evaluation of information products and services together with principles of managing information operations, provide a unifying approach to information studies.

The approach consists of: (a) Information resources: what is information, how it is generated, stored, organized and retrieved, how is the value of information determined, how it should be synthesized and formatted to enhance its value?.

(b) Information users: how individual seeks and use information and what is its impact on the design of information systems?

(c) Information services: access to information, users fees and censorship.

(d) Information management: theory and practice of management and administration of information systems and services; extending from strategic management of information resources to administration of libraries, media centers and specialized centers.

(e) Information policy: development of national and international policies.

(f) Information research: methodology that includes data collection, synthesis, analysis to support applied, developmental and basic research. (pp.332-333)

SEWELL. PHILIP, 1979:

This is a call for broadening librarians' spiritual horizons and to improve communication of particular viewpoints. As Christian librarian, one should respect peoples dignity and integrity when serving them. The approach should be based on the Hebrew concept of truth as a dynamic thing, and Greek concept of truth as a static thing, "that which is in contrast to that which is not." (p.301)

SHARMA, JAGDISH SARAN, 1965:

Science of librarianship is discussed in terms of traditional library functional divisions. Differentiation is made between organization and administration of libraries; organization creates the library; administration runs it.

Library organization deals with library buildings, equipment, staff and interdepartmental coordination. Library administration is the active management of a library, which includes formulation of operational policies and procedures.

Classification is the arrangement of books for readers' convenience. Among the best known classification schemes are: (1) Dewey's ten classes decimal classification (2) Cutter's expansive classification with constant basic notation of the main classes and subsequent expansion, (3) Brown's subject classification based on matter-life-mind-record principles (4) Library of Congress separate subject schemes, (5) Universal Decimal subject classification, (6) Ranganathan's analytico-synthetic Colon Classification, (7) Bliss's Bibliographic Classification combining coordination of classes with practical needs, and (8) Soviet Marxism-Leninism classification based on historically evolved subjects.

Cataloging provides information about resources and their descriptions. Types of cataloging include: (a) a name catalog [alphabetical arrangement by names of persons and places], (b) dictionary [author-subject-title in one alphabetical order], and (c) a classified catalog of subjects arranged in a systematic order following the scheme of classification.

[Also introduced at that time was the title catalog (alphabetical arrangement by the title of the publication), the approach now used in computerized catalogs.] (J.Z. Nitecki, 1968b)

Technical services are responsible for acquisition, classification, cataloging, binding, reprography, and circulation. Reference services include organization, administration of reference resources, advise, and instruction on the use of reference sources.

SHARP, JOHN, 1981:

The cult of the bookman and the emphasis on the philosophical rather than the technical aspects of librarianship lead to the creation of professional ethics. Ethical judgment is left to the library customers, who judge librarians in terms of their efficiency in making needed resources available to the patrons.

All progress in librarianship is the result of outside contributions. Librarianship should recognize its modest place in society and concentrate on organization, system analyses and businesslike service.

The nature of library service does not need an explication, unless it is of interest to people involved in abstract philosophy rather than practical utility. Librarianship is interested more in rhetoric than in logic; its first law might be: "There's no such thing, 'and the second 'A librarian's ability to run a library varies inversely with his knowledge of literature." (p.193)

SHAUGHNESSY, THOMAS W., 1976:

Failure to develop knowledge base in librarianship is partly a result of: (a) focusing on the form, order and structure rather than on the substance of the discipline and on the relationships between organization of knowledge as knowledge and its content expressed in recorded knowledge; and (b) considering a bibliography as basically a methodology.

Metascience, in Kaplan's terminology, is about subject matter provided not by nature but by our ideas about it. However librarianship cannot be a part of metascience because it interrelates with other disciplines on bibliographic methodology only. Metascience in Otten and Debon interpretation provides a synthesis of various disciplines in one theory; this function can be performed by information science, which in this sense, can be also considered a metascience for librarianship.

"Librarianship has only marginally attempted to utilize or build upon or synthesize theories developed by other disciplines, despite the fact that from a methodological standpoint it is particularity able to do so. It has at its disposal the entire range of bibliographic methods and search strategies necessary to locate, identifies and communicate such theories, regardless of their disciplinary parentage. The creative synthesis of relevant theories selectively culled from the entire spectrum of disciplines would in itself constitute a major contribution toward establishing a theoretical knowledge base for the profession." (p.174)

SHAVIT, DAVID, 1986:

This is an argument against the notion of the apolitical public library. The concept emerged in the nineteenth century, when a public library was encouraged to keep politics out of the library, and thus to avoid public control of, and accountability for library activities.

The nonpolitical approach resulted in weak public pressures for library services, reflected in weak tax support of library operations. The solution offered is a call for librarians' political involvement and library administration sharing its decision processes with library public.

SHAW, CHARLES B., 1932:

Librarians deal with diverse knowledge, which requires superficiality. "Superficiality is universal and inevitable." (p.503) "Superimposed upon this general superficiality, in the librarian's case, is a specialized technique [which] does not admit its possessor to the realm of scholarship." (Ibid.)

Librarians may become scholars by mastering any subject of knowledge on their own pace and initiative not for formal degree but self-assurance and acceptance by intellectual peers.

SHAW, DEBORA, 1982:

The second law of thermodynamics "says that in a close system (one which is isolated from other sources of energy or matter) or in the universe as a whole, each use of energy to perform work results in less available energy in the system. Entropy is a measure of the amount of energy unavailable for useful work." (p.67)

The concept of entropy raised a number of philosophical questions such as the meaning of pragmatic informativeness of a message, the value of answers to specific questions, different interpretations of probability, relations of information to relative entropy (redundancy), negentropy (information changing the system) and 'endechy' (measures of order and disorder in a system).

In information science entropy is seen as interrupting orderly library system. Its impact is reduced by devices such as indexing (order-creating processes), or vocabulary control and subject classification in stored information.

SHAW, RALPH R., 1967:

The effectiveness of social institutions is demonstrated by their dynamism; when they do not meet social needs, they survive not by closing, but by adding another social institution. The public library is an example, its success is measured by its growth rather than its stagnation, while the society bypasses it by creating new devises to obtain needed information.

"The word 'library' is used here in its generic sense - the collection, organization, and supply of intellectual resources, . . . regardless of the physical form in which these occur, the intellectual level at which they are organized, or the physical form in which they are stored, manipulated or supplied; and regardless of the purpose for which they are to be supplied or the intellectual level of the activity for which they are recalled." (p.2883)

"The question is not whether we can have library service that uses all available mechanisms to provide support for society's intellectual needs, but whether we have grown enough in vision, commitment, and energy to synthesize these into the most suitable application of the various mechanical modes so as to multiply their effect by each for the things it can do best." (p.2884)

SHAW, V.A., 1987:

The issue of financing information depends on the definition of information as a public good or a marketable commodity. The subsidization of information services is determined by the perceived value of information services by their users.

Public goods are characterized by their 'non-excludability' and 'non-depletability'. "While there may be a superabundance of information (which goes against its classification as a marketable commodity) it is when it has been structured that it has the characteristics of a marketable commodity." (p.2)

The sponsorship or the subsidization of information services is needed when the marginal cost of extending the services is larger than the marginal income. However, it is difficult to assess the fees for library operations since the social benefits of library services are difficult to determine.

SHEARER, KENNETH, 1979:

Research can impact librarianship in two basic ways: (a) on the knowledge base of librarianship as measured by number of citations, and (b) on the actual library practices, It seems that the former impact is greater than the latter.

Shearer also makes a distinction between (a) knowing what exists; it relates to the nature of librarianship and (b) improving on it; it refers to the uniqueness of library and information sciences by expanding access to recorded knowledge.

SHERA JESSE HAUK:

Shera's contributions to librarianship are too extensive for the comprehensive review in this compilations. Included here are the works cited in this study by others and in the Library Literature under: 'Librarianship-Philosophical Aspects'. For full bibliography and additional bibliographic information about Shera's writings see G.M. Isard (1973) and H.C. Wright (1988).

OVERVIEW:

Shera's interests varied widely, covering communication theory, documentation, history of libraries, library education, brain-computer relationships, research, intellectual activities and freedom of information. His writings provided a bridge between Butler's focus on individual as a member of a society, Broadfield stress of society's obligations to the individual, and Foskett expectation that librarian becomes an alter ego of individual (Foster, 1979)

On Philosophy:

"Librarians have failed to create a valid professional image . . . for the very simple reason that they have never adequately formulated a professional philosophy from which the proper image can be derived . . . Love of books does not a librarian make - librarianship is many things to many people with many needs in many situation, and the interdisciplinary character which constitutes its great strength contributes to the complex problem of interpretation." (1962a, pp. 4484-5)

The greatest and most important failure of librarianship is the "absence of synthesis which pervades every aspect of the librarian's practice. 'Social relevance' has replaced civic excellence, and the documentalists and information scientists have often looked to rhetoric and disputation rather than logic. This failure to achieve a synthesis, a commonalty of opinion, concerning the nature of librarianship qua librarianship, a consensus that a philosophy of librarianship would have provided, often manifests itself in subtle and obscure ways." (1976a: p.282)

"The socio-epistemological philosophy of librarianship . . . does not exclude the important contribution that the physical sciences can make to the intellectual arsenal of the librarian . . . If librarianship is to be considered, as it must be, with epistemological problem in society, it must also be interdisciplinary . . . The real question that librarians must ask themselves is not 'Is librarianship a science?' but rather 'What kind of a science does or should, librarianship represent?' . . . A librarian, therefore, must be a scientist, not because he may be doing out scientific literature to scientists and will perforce need to communicate intelligibly with the patrons, but because science, in its broadest sense, is the foundation of the librarian's scholarship . . . [The new discipline of] social epistemology, or social cognition . . . should provide a framework for the investigation of the entire complex problem of the nature of the intellectual process in society - a study of the ways in which society as a whole achieves a perceptive and understanding relationship to its environment . . . The focus of this new discipline should be upon the production, flow, integration, and consumption of all forms of communication thought throughout the entire social fabric." (1973a, p. 96-7)

On Library:

Shera maintains that libraries are concerned with sociological and psychological phenomena not with physical objects and processes

"The library is seen, not as an inert, static adjunct of our contemporary civilization; but rather as a dynamic, mobile phenomenon, responsive in every way to the vicissitudes that beset those economic forces that brought it into being. It must logically follow, then, that a sound comprehension of present-day social and economic development must be the true point of departure for all who would seek to project into future the trend of current library policy." (1933, p.340)

On Librarianship

"What is librarianship? Basically, it derives from two disciplines. Certainly, it is an aspect of communication, and language, or linguistics is central to it." (1961, p.169) "But librarianship, as the management of knowledge is also rooted in epistemology - the knowledge of knowledge itself - and especially social epistemology, the way in which knowledge is disseminated through a society and influences group behavior."(Ibid.) "Individuals not only make the society,

society continually reshapes the individual; this is perhaps the most important key to dynamics of the library." (Ibid.)

"Librarianship despite its increasing utilization of the sciences and its affiliation with the social sciences, remains in its essence humanistic . . . because it is basically concerned with that elusive and subtle relationship between the human mind and the record of the great adventure. Librarianship classifies as a social science because the library, as an institution, is a creature of society, and its goal is the improvement of society by helping the individual to understand himself and the world of which he is a part. But the library is also concerned with man as a rational being. Thus, it remains primarily a humanistic enterprise." (1976, p.9)

On Librarian:

"The librarian must see his role in the communication process as being more that a link in a chain, or the intersections in a network. The librarian must concern himself with the knowledge he communicates, its relevance to individual user, its importance to society, and environment in which communication takes place. He must know not only how to perform his role, but why the role is to be performed and the extend to which he can fill its demands - he must see librarianship clearly and see it whole . . . to bring man and book together in a fruitful relationship for the benefit of the individual, and through the individual to society and to do so in an environment hospitable to serious meditation . . . either with or without the benefit of electronic gadgetry." (1969, p.2879)

On books and intellectual freedom:

The argument for intellectual freedom is internally inconsistent. "The censors argue that the reading of 'bad' books harms the individual and promotes antisocial behavior, and that such reading matter should therefore be banned from libraries." (1967, p.323) "The librarians reply that there is no evidence that the reading of such books is harmful, and therefore the shelves of libraries should reflect all aspects of life and all points of view so long as the writings have merits, 'intellectual integrity; and truth . . . but they do not stop there. They argue that the reading of 'good' books promotes 'good' behavior . . . librarians can't have it both ways." (Ibid) "If no one knows what effect reading has on the individual or on society, how can it be argued that 'bad' books are not harmful, while 'good' books are beneficial?" (Ibid.)

On Information science:

Originally Shera thought that information science will provide the intellectual and theoretical foundations of librarianship, but later he "seriously question[ed whether there is a true interdisciplinary relation between librarianship and information science," (1983, p.383).

"Information science is severely limited in its communicative potential. Its only aim is to provide efficient access to knowledge [it] cannot qualify as a theoretical base for librarianship." (Ibid., p. 386)

"Information science is an area of inquiry, of research. It is not, as is librarianship, a service or practice. The social purpose of the library remains unchanged - to bring the human mind and the graphic record together in fruitful relations - for the growth of knowledge is still the goal." (Ibid., p. 387).

On social epistemology:

Social epistemology proposed by M. Egan and refined by Shera is a reverse of sociology of knowledge. Sociology of knowledge is an empirical study of social factors of knowledge and their influence on ideas. Social epistemology is a study of intellectual processes of a society as a whole.

"Social epistemology' . . . will provide a framework for the effective investigation of the entire complex of problem of the intellectual processes of society - a study by which society as a whole seeks a perceptive relation to its total environment. It should lift the study of intellectual life from that of a scrutiny of the individual to an inquiry into the means by which society, nation, or culture achieves understanding of the totality of stimuli which act upon it. The focus of this new discipline will be upon the production, flow, integration, and consumption of all forms of communicated thought throughout the entire social pattern. From such a discipline should emerge a new body of knowledge about, and a new synthesis of, the interaction between knowledge and social activity." (1961, pp.15-16)

On democracy:

"If the democracy assumes the responsibility of supporting libraries, then the library has a positive obligation to contribute to the advancement of democracy . . . the affirmative and urgent obligation of the library is not unlike that of the university - to mediate between books and those who need them to the end of improving the lot of the individual and of society . . . the primary responsibility of the library is educational, to stimulate the intellect, to broaden the reader's experience, and challenge him into new avenues of creativity" (1972a, p.115-116.)

SHERIDAN, JEAN, 1986:

In the expanding adult population libraries are required to develop a new approach to library services.

Andragogy, or the teaching of adults, is a "mutually respectful, informal, collaborative style of teacher/student relationship. (p.159) Pedagogy "is authority oriented, formal competitive, and more dependent on instructor." (Ibid.)

Andragogy requires an informal environment that satisfies adults: (a) to gain something in time, money, and security; (b) to be up to date, creative and recognized; (c) to express and improve themselves, resist domination by others; and (d) to save and avoid discomfort, self-doubts and embarrassment. Adult patrons are self-directed and resourceful.

"The crucial factor . . . lies in the differences rooted in the social roles played by adult and child. The pedagog assists the child to become an adult while the andragog helps the adult to become more competent." (Ibid.)

"The philosophical base is a "model in which individuals are no longer viewed as passive receivers or reactors but rather as active and proactive agents who are deeply involved in all their endeavors." (p.164)

SHERMAN, CLARENCE E., 1938:

The objectives of the American public library are reviewed. The initial notion of "the largest number of books for the greatest number of readers at the least cost" was changed to "the best reading for the greatest number at the least cost." (p.23)

The different approaches are summarized in three viewpoints: (a) censorship theory based on the authority for selection of books that readers should read; (b) sponsorship theory calling for impartial provision of material on both sides of issues, and (c) leadership theory, an extension of sponsorship theory including librarians duty to provide leadership in informal education and in improving society by the improvement of individuals.

SHIELDS, GERALD R., 1977:

"Where do the librarians find the moral and well-thought out philosophy which support them in the performance of their duties? How do they evaluate the society they serve and relate that society to the belief in the ideal that reason given the opportunity will prevail? Where is the climate and the time to study freedom and what relation it has to the library and its collection? ... Could it also be that the librarian in the field . . . has little knowledge and background in the significance of a philosophy which would relate to library service and the society served?" (p.1824)

"Time has come for librarianship to acknowledge that free access to the communications media collected by libraries is basic to all professional librarian values, attitudes and performance. Intellectual freedom must be explored, examined, evaluated and promulgated on a firm, realistic basis in a climate outside the pressures of the library operation and cognizant of the ideals of a free society." (p.1825)

There is no sufficient definition of intellectual freedom; the concept addresses the issues of censorship of published material and of books in library collections and it relates to the conflict between neutrality versus library advocacy role. Librarians are for intellectual freedom but do not support it in practice.

SHOAF, ERIC, C., 1988:

The author discusses the contribution of Cleverdon to indexing. He was responsible for a 1957-1960 Cranfield Projects aiming at developing a body of facts to replace unscientific assumptions held about indexing.

Cleverdon's general hypothesis was "that as the total number of citations generated by searching increases, the number of useful citations increases. Improvement of both recalls and precision was based . . . on the intelligence and skill of the searcher and his knowledge of the indexing system." (p.7)

These are the foundations for evaluating present computer assisted searches, and may justify considering Cleverdon 'the father of information science.'

SHORES, LOUIS, 1955:

Following the ideological conflict with Soviet Union, focus of Western librarianship is on the promotion of free inquiry, which depends on the availability of library materials and its accessibility.

The "constructionist theory of reference work . . . holds that the prime duty of the library is not to find answers but to organize its material effectively and teach patrons to help themselves (p.374). In Soviet Union reference service is addressing not the process of free inquiry but of indoctrination. In the West reference "must anticipate questions the people will ask about all sorts of issues. It must be purposeful in balancing the inquirer's investigations as the totalitarian reference service is in unbalancing them." (p.376).

---- 1958:

"This is to the credit of librarianship that when the records of civilization became so numerous that their location became ever more uncertain the profession produced several systems of classification. In my opinion the contribution of Melvil Dewey is in the same relation to Bibliography and Epistemology as the contribution of Carl von Linnee, the Swedish naturalist, is to Botany and Zoology. Charge it to my professional bias when I say the decimal device of the DC shows at least as much creative genius as the binomial feature of the Linnaean Classification." (p.201)

---- 1966:

"When a College is a library and a library is a college, it is a Library College." (p.3871) The idea of Library College is based on the concept of "independent study at the individual's pace, in the library rather than group teaching at an 'average' rate in the classroom [as] the rule for all students regardless of their range of talents." (Ibid.)

The librarian is "better equipped to guide the undergraduate to a liberal education than are most of his colleagues who try to teach in the classroom." (p.3873)

Library collections can now meet needs of individual patrons by facilitating independent study with librarians teaching where and how to find needed resources, by introducing students to an encyclopedic summary of knowledge.

---- 1967:

The three major weaknesses of librarians are; (1) the emphasis on silence in the library, which results in whispering and tiptoing not only on the job but also about it, developing a professional inferiority complex; (2) 'an ancillary complex' by defining "everything we do as in support of something else." (p.589); and (3) professional pragmatism.

Shores suggests the following criteria to guide librarians: (a) "a good book is concerned with the good life, and it evidences this concern not by accent on the opposite." (p.591); (b) the art "should explore the extrasensory and concern itself with the ultimate far more than the proximate" (Ibid.); (c) librarians have a creative role in education by guiding independent study; (d) they are generalists permitting students to ignore subject compartmentalization; and (e) the "retrieval of isolated individual facts with, or without, computer assistance is less conductive to creative discovery than synthesis and interpretation." (p.592)

---- 1970:

Shores considers comparative librarianship as an important factor in social reforms by comparing library history and practice among different countries.

He defines comparative librarianship as "the study and comparison of library theory and practice in all of the countries of the world for the purpose of broadening and deepening our understanding of problems and solutions." (p.451) "Comparisons within a country may be just as significant as comparisons with other countries." (Ibid.))

---- 1971:

Shores stresses the importance of vehicle transmitting knowledge, the generic book, and of the librarians role in mediating between specializations that separate science and humanities.

Librarianship is concerned with the ultimate issues; it "is the profession dedicated to the preservation, dissemination, investigation, interpretation of the knowledge most SIGNIFICANT TO MANKIND." (p.215, author's capitalization)

The generic book is the record of civilization, "the sum total of man's communication possibilities [comprising] all subjects, levels, and formats." (p.215) It contains knowledge most significant to mankind; while communication is an essence of life. "The theory of the GENERIC BOOK opened many philosophical avenues to education, to librarianship, and perhaps even to . . . epistemology" (p.218, author's capitalization); and it leads to the library-college movement.

Information philosophy involves (a) reference as promotion of free inquiry, (b) an encyclopedic approach which is a backbone of reference and serve as gateway to information implosion and modulation.

---- 1974:

"From the start, basic reference has been an information theory of conciliation. Between the extremes of reference art and information science, basic reference has sought a mean through the centuries-old approach to information by the encyclopedists." (p.199)

The basic reference theory had four components, extensively discussed by Shores in his other publications.

(1) Conciliation of information science and art. It refers to minimizing the conflict between sciences and humanities.

(2) The generic book concept relates to all forms of recorded knowledge.

(3) Information education should stress balanced relationships between 'retrieval' of information and 'initiation' of inquiry, thus mediating between the extreme conservative view of doing nothing for the inquirers, and the liberal approach wanting to do everything for them.

(4) Redefinition of the library's information role in society should be based on an encyclopedists' approach to knowledge.

---- 1975:

Among the twenty crusades identified by Shores, relevant here is the concept of library-college stressing the role of library in promoting independent learning for all, spearheaded by reference librarians encouragement of inquiry among his patrons. The focus of Shores theory is the generic book that encompasses all types of recorded knowledge, especially audiovisual formats. The library can offer the individual an opportunity to use his intellect in solving variety of problems.

SIMPSON, D.J., 1963:

"Librarians must become more aware of the possible effects of automation on libraries. At present, those librarians who concern themselves with the social significance of libraries and reading tend to show small interest in the use of machines and information retrieval systems in libraries.(p.406) "The quality and quantity of library services must improve rapidly in the near future. The public need is clear, and the will, effort and understanding of librarians is essential to meet it . . . if we fail, we shall ourselves be among the losers." (Ibid.)

SKOVIRA, R.J., 1989:

The author makes a distinction between a 'science ' and 'sciences' of information. Information is considered an end result of the process of interpretation of experienced facts and objects, and perceived relationships between them. It is defined by information system in terms of its structure and needs.

SLACK, JENNIFER DARYL, 1987:

Descriptions of the information age are ideological, and ideology permeates what the information age is, how it is lived, how it is experienced, and what it will become. It is the concept of 'ideology' that problematizes the relationship between the real social practices, relations among them, and their prescriptions." (p.2)

The real changes in political, economic and social practice are described in terms of the ideologies of common-sense meaning, which become part and parcel of the reality they describe.

There is a competition between different meanings of ideology. To some it is a fundamental aspect in human life and means 'a power exercised through representations', others interpret it as a mechanism of repression, a dominant influence, that limits individual choices.

The philosophical assumptions of information age include the notions that (a) information becomes a principal commodity, (b) it is society's economic engine, and that (c) it is capable of unlimited growth. These assumptions are challenged on the ground that: (a) new ideology is ethnocentric, deevaluating analog information in favor of its digital interpretation; (b) that statistical notion of information and philosophical of knowledge are not the same, (c) information growth is not equivalent with the growth of knowledge,"the distribution of information has less to do with the transfer of knowledge than it does with the transformation of knowledge - and those transformations are best understood as dependent and functioning within the social, political and economic structures of society." (p.6)

SLAMECKA, VLADIMIR, 1967:

Slamecka's hypothesis is that "most of 'new' knowledge is generated by the application of existing or modified methods to the new sets of problems, it is theoretically possible - once the structuring relations of information are understood - to generate new knowledge by information processing automata"(p.6) The method is "the moving force of science and of knowledge growth . . . information processing systems and mechanisms [have] an algorithmic capability of fostering an interaction of methods and problems." (Ibid)

The major problem of information science is information structures, the nature and properties of symbols, signs and codes representing information. The use of information is determined by the access to it through the descriptive tags used in computers.

---- 1975:

Slamecka discusses a shift in the research of information science. The initial focus was on applied objectives to develop information science as a model for supporting the economic growth by improving the efficiency of science and technology. The new focus is on managing knowledge as a social resource that requires the understanding of the value and properties of knowledge, the machine optimization in decision-making processes, the dilemma of common good and individual privacy, and the nature of production and consumption of knowledge.

SLIGHT OWEN, 1980:

The author describes two possible scenarios for library future: (a) people will not be able to find information for themselves, they will become consumers, divided into those who can and cannot afford access to information; (b) technology will serve everybody equally, providing access to all information free to everyone.

"The question is . . . whether there will come to exist a sufficient number of librarians with an appreciation of individual and society needs to carry their work successfully

. . . or whether the quality with which we are now so heavily endowed, and which inhibits us from actively pressing our aims and philosophy, will mean that some sort of pure technologist will become the magnus or wizard of information, and a regression into the nightmare of the first scenario occurs." (p.50)

---- 1988:

Science is supported by society because of the belief that it attempts to unify metaphysical and meta-narrative approaches to all aspects of society. This belief is negated by the science itself in its subdivisions, each discipline using its own interpretation of the universe. The change resulted in a severe compartmentalized postindustrial society, which attempts not to validate the truth as such but to adhere to the principle of optimal performance. The approach negates the traditional focus on ideals, and research about truth itself.

"Knowledge is neither private to minds, nor is it any longer the exclusive possession of scholars . . . it has been objectified and externalized, given independent existence, and is reusable." (p. 94) It becomes universally available as a commodity amenable to commercial transactions and transformations.

Libraries are lacking a theoretical or philosophical basis compatible with postmodern developments, and will lose its priority.

In the past library services were based on "the speculative meta-narrative which conceived knowledge as 'Truth' . . . by which the role and function of the library was legitimated. Knowledge . . . a raison d'etre of library . . . was not an important subject of enquiry, except amongst philosophers." (p.95)

Changing the traditional library functions into modern information support centers, might result in an irreconcilable conflict between libraries' information and research functions.

The traditionalists recommend that information should be provided free of charge to everyone, based on a speculative, meta-narrative argument for the preservation of democratic rights. The postmodernists argue for a 'new order' in which libraries would be run efficiently and effectively by private sectors.

The library-museum, free from information function and technological requirements of 'performativity' (efficiency, cost and speed of services) is seen as the best way to preserve library basic function to support scholarship and research.

In the new order, knowledge will not be localized and accumulated in libraries. Traditional printing material, considered superfluous, will be withdrawn from a college library and deposited in regional library-museums. Students will use libraries as information retrieval work stations, while publications will be provided 'on demand'.

Library-museum will "preserve and even enhance its natural function as a complex, varied and vast resource from which scholars and researchers may draw unique and rare materials that are essential to the enrichment and progress of their scholarship." (p.97)

SMITH, FRANK, 1982:

Fundamental in reading are its linguistic, social and physiological aspects. "Reading and learning to read are essentially meaningful activities . . . they are not passive and mechanical but purposeful and rational, depend on the prior knowledge and expectations of the reader (or learner). Reading is a matter of making sense of written language rather than of decoding print to sound, a theoretical position that has become known as 'psycholinguistic." (p.2)

"This is a question of who is in charge. From the decoding point of view, the reader is under the control of the text and must mechanically identify every letter and word in front of the eyes. But the meaningful perspective holds that what goes on behind the eyes is the critical factor. Reading is seen as having four distinctive and fundamental characteristics - that it is purposeful, selective, anticipatory, and based on comprehension, all matters where the reader must clearly exercise control." (pp.2-3)

SMITH, GERRY M., 1973:

Sociology is a study of human behavior in the context of a social group. Smith reviews its relevance to librarianship.

In education, the structures, goals and ideologies of educational institutions have major impact on library services. The pattern of library use by university students depends on the reasons for their attending the university.

Mass media replaced the theory of mind as tabula rasa by an 'interaction' model claiming that a person receives messages via complex 'filter', with authoritative messages influencing the selection of messages received. Public libraries should augment the mass media in areas of current affairs.

Library-oriented sociology of knowledge addresses the questions of who reads what, why and where, and it study the attitudes and values of different groups of patrons toward different types and formats of information.

Sociology of librarianship focuses on professional aspects of librarianship. It points to the cooperative and supportive attitudes of librarians, with emotional neutrality in dealing with readers requests. This is caused by a librarian's lack of ulterior motive and disinterest in the outcome of information transactions.

SMITH, JOHN, 1977:

Systems theory maintains that everything is interrelated. In librarianship it focuses on libraries' internal and external relationships. The system of library networks was already known in Roman and medieval times by disseminating ideas and knowledge throughout the world; today's system is similar although more complex and larger in scope. Libraries "fulfil the essential function of the systems view of the system - the cultural base from which society operates and on which the system depends for survival." (p.54) "Libraries are our corporate social mind." (Ibid.)

---- 1981:

The free access to library resources is reviewed in the context of the demands for charging the users for library services. In "discussing the library charges at a philosophical level we should express the values of education . . . of imagination, . . . of human aspirations . . . of truth and accurate information, fiscal values of created wealth to provide such services, as well as human aspirations of freedom and responsibility of knowing on which some of our arguments are based." (p.2)

The arguments concerning economics of access include: (a) a view based on the freedom not to pay for services not needed by nonusers or illiterates, and (b) economic argument for reducing public spending by public libraries to recover some of the costs of their services.

The value of a book varies with the readers and depends on the relationship between the content of the book and the reader's prior knowledge. The monetary values of library services are only a part of the total library value system. "The other values as seen by the profession of librarianship, are values which are important to a civilized state, values of education, literacy and democracy, which implies the right of access to the recorded culture of the world." (p.5) The library service represents people's belief in the ultimate improvement of mankind; restricting freedom of information is a form of censorship

SNYDERWINE, L. THOMAS, 1981:

We know how the knowledge has been recorded but not why. According to Snyderwine the purpose of recording always was and is to commemorate, communicate, pray, calculate, measure, and to preserve.

Ancient evidence for recorded knowledge is rediscovered in the cultures of great rivers: Nile, Tiger, Euphrates, Indus, Ganges, Hwang Ho, Yangtze, Menam and Mekong. Art of recording knowledge evolved with the development of technology, but the purposes for recording reminded the same. With the improved technology the need for recording increased, and the knowledge itself is derived by inference and deduction from its records.

SOKOLOV, ARKADI V., 1993:

"Public knowledge in each historical period represents an inimitable, contradictory and stochastic mosaic of competing and mutually complementary (epistemological) systems." (p.193) Hence classification of knowledge should be based "not on the classification of science but on the classification of public mentalities, which give rise to historically stipulated semantic mosaic." "The system of mentalities is . . . a system of mosaic of public knowledge, and the 'intra-mentality classification' is a method of presentation of the inimitable color of each mosaic."(Ibid.)

SOSA, JORGE F. and MICHAEL H. HARRIS, 1991:

Ortega perceived a librarian as a 'master of the raging book', controlling its production and as the filters, censoring its content. In spite of early criticism of his approach, pointing to its neo-fascist tendencies (Kunitz, 1936), Ortega's views attracted American librarians, creating a paradox of simultaneous approbation and rejection of his philosophy.

Ortega defined the mission of librarianship in the context of (a) the 'mass man', (b) the role of the book and (c) librarians' professional responsibility.

According to him, 'mass man' is shallow, self-centered, ignorant, intolerant, careless reader, easily influenced by demagogues. Book, not essential till Renaissance, became socially indispensable interpretation of reality in the mid-nineteen century. At first considered a beneficial instrument in solving social problems, the book soon becomes an uncontrollable treat to the society, by creating informational overload of 'useless and stupid' books widely read but without thoughtful reflection on their intellectual or moral values.

The library profession consists of (a) a career, a mission socially defined and freely chosen by librarian, and (b) the vocation defined in terms of changing mission, which follows changing significance of the book in the society. Once the political role of the book was recognized by the state, the library mission becomes a part of state bureaucracy.

To remedy the ill-effects of the change, librarians were asked by Ortega to control the production of books, and to 'filter' their content. They should abandon neutrality by developing a bibliographic technique, the 'statistics of ideas', for charting history and influences of ideas as means for limiting the production of bad books and for increasing the publication of good books.

Ortega's philosophy was reinforced by Daniel Bell's metaphor of 'information society' describing a shift from production of goods to production of information as a commodity.

American librarians' reaction to Ortega was ambivalent. On one hand they shared with him his concern about the vulgar taste, and a need for cultural uplift. On the other hand, they were indifferent to the selection-censorship paradox, contradicting democratic philosophy of library service.

Asheim (1953) avoided the controversy over the control of reading material by drawing a distinction between selecting and prescribing reading material. Later (1982) he reevaluated Ortega's mission by accepting the 'filter' function of reducing the information overflow, but in terms of the individual not librarians, needs. K. Molz (1966-7) endorsed a prescriptive role of librarians but rejected their responsibility for censoring book production. Shera (1972) agreed with Ortega's liberal mission of uplifting reading taste, but warned against the librarians control of knowledge production. Lancaster (1978) endorsed Bell's notion of 'intellectual technology' arguing for adopting computer technology for resolving the library storage problem, which in turn, will create a 'paperless' libraries, transcending the traditional focus on structure and function. Blake (1978) warned against the division between information rich and poor society. Berninghausen (1979) criticized the 'information paradigm' as negating librarian's neutrality in protecting intellectual freedom. H.T. Blanke (1989) cautioned that the post-industrial information mentality may change librarians philosophy from service-oriented to technology-dependent view of technocratic elite. Both he, and P. Schuman (1990) rejected the librarian's participation in the 'information marketplace' based on the production, management and sale of information, as contrary to the provision of access to information.

"The result has been the creation of a deep split between those librarians who insist that librarians must remain committed to neutrality and passivity even at the expense of professional status and those who insist librarians must quickly move to establish the foundations of professional authority within the context of the information paradigm." (p. 19)

SOUZA, SEBASTIANO de, 1986:

"An attempt is made to establish the relationships between philosophy and science, librarianship and information through the study of concepts and scope, to enhance the philosophical and scientific basis and principles of librarianship." (p.189)

SPAULDING FRANK H.. 1988:

History of librarianship supports the proposition that changing society will support future librarians and information scientists.

In 1437, Guttenberg demonstrated movable type printing press. Printing gives permanence to ideas, expanding literacy and promoting democracy. The legacy is the awareness of information.

In 1830s the railroad becomes successful in America, shrinking the globe, changing the sense of social responsibility to global orientation. Its legacy is an awareness of technology that gives us the power to make our vision manifest.

In 1907 John Cotton Dana, defined the role of the special librarian as adaptable to changes. In 1947 the invention of the transistor made possible development of a computer. The computer changed work habits. Synthesis of available pieces of information becomes a major intellectual and managerial task. Its legacy is the awareness of needs.

STAM, DEIRDRE C., 1989:

The proposition that Melvil Dewey's social philosophy influenced development of modern librarianship is difficult to proof, since he wrote very little about the philosophy of librarianship. The assumption can only be inferred from his professional activities, that reveal "an interest in contemporary utopian social experiments, and an emphasis upon group living and cooperative ventures for the purpose of improving physical and mental health and achieving refinement in taste and the quality of life."" (p.125)

STAMPRE, R., 1988:

Everything can be seen either as a physical thing or as a sign or message with informational properties such as meaning, validity, relevance, or information content.

Information systems transmit messages within and also outside of themselves, functioning as a communication device from their creators to those who use them.

The physical view of information system focuses on the volumes of data, speed of transmission, reliability of components and adaptability of subsystems. Information system as a message conveys (a) the views and intentions of the author, expressing his values, (b) values of the users reflected in the market for information, and (c) the values of public in general through public influence and politics related to libraries.

Overall, the culture is the basic evaluative system, with decisive but seldom fully articulated judgment. One must anticipate such cultural reaction by feedback in terms of the impact of the innovation on behavioral patterns.

Evaluation framing is a method of analyzing impact of innovation system on social patterns of behavior. Failure of the system may be due to users' dissatisfaction.

STANOULOV, NICOLAY, 1979:

The essay provides a model for a logical transition from mathematics to metamathematics that can be also applied to the transition of information in information theory.

Common communication is a relationship between 'message send' and 'message received', interdependent on each other and analyzed statistically as a part of an information transfer.

The process starts with an informal theory transmitted into ametatheory that is determined by: (a) the direction and nature of a scientific investigation, (b) the time parameter in which the transformation takes place, (c) an intensity (in-depth level) of scientific investigation, and (d) formal and informal levels of the study.

"The outlines of evolutionary approach in information science allow us to look for obtaining a specific new knowledge about the general form and matter of the information phenomena and their corresponding objects . . . a natural . . . task of such a metainvestigation should be not only the explication of the considered subject but also the elaboration of the tangible means for its successful application in other scientific disciplines." (p. 315)

STAVELEY, RONALD, 1964:

The author reviews a number of philosophical viewpoints in search of basic concepts in the philosophy of librarianship.

Each librarian and his work-attitudes are consciously or unconsciously shaped by his philosophical viewpoint. "A man can hold no philosophy of librarianship . . . that conflicts with his philosophy of life, if by philosophy we mean something serious like 'that upon which a man will act'." (p.4)

Plato and Socrates believed in absolute values, leading to the paternalistic view of society. Applied to librarianship it may impact on the selection of resources and access to them.

Thomists expressed views stressing the importance of an individual in sociological interpretation of culture. Here librarians complement teachers by guiding the patrons to the self-mastery and self-fulfillment.

Existential philosophy stresses the experiencing of self-existence as prior to thinking about it. The focus is on the personality of individuals.

Pragmatism opposes speculation and abstraction in choosing alternatives, and considers everything as interdependent and relative to the total values of the society.

Behaviorism discusses the deterministic factors that condition human behavior. In librarianship important is the understanding of the impact of reading on readers.

Logical positivism rejects the idealistic approach in preference for empirical study of language limitations. In the communication important is the consideration of language in the context of psychological and social circumstances.

Analytical philosophers are relativists in analyzing human conduct and its aesthetic expressions.

The scientific humanists follow Francis Bacon in interrelating science as an instrument of progress, with humanities as a source of inspiration. They believe in popular education relevant to individuals' needs. Librarians ought to be interested in human communication, considering each individual as a unique person.

Dialectical materialism gives preference to scientific and technical factors in the human progress, with libraries considered as tools and instruments of state policies.

The author stresses (a) the significance of personal development in educational processes, (b) the importance of libraries as the means in communication processes, (c) in dealing with patrons, librarians must be open-minded but also self-conscious of their own convictions in order to appreciate the views of the readers, and (d) library organization of resources reflects the philosophical trends and biases, and should be interpreted in the context of library envirpnment.

STEINER, GEORGE, 1972:

Most books are about books written previously. "The relations of descriptive adequacy between human language and the 'outside world' may be epistemologically opaque . . . there are deep problems about meaning what we say and saying what we mean, about understanding one another and about denoting objects or sense-data unambiguously." (p.122)

In the present format, the book is a phenomenon of a certain cultures and times. Reading with 'unmoving lips' was first reported in early Christianity. Book as a common aspect of everyday life depends on the economic, material and educational conditions, which were nonexistent prior to the sixteenth century.

The reading in the eighteenth century depended on the education of the reader, his leisure, non-menial occupation, and convenient environment (space and silence). Today reading competes with other media, the paperback facilitates reading by its compactness, quasi-disposability, and accessibility.

Nowadays, traditional book reading is under attack. The focus is on 'now'. It is expressed by the surrealistic antilanguage and nihilistic movements, criticizing classic elegance and seriousness of writing. "It is one of the major effects of modern philosophy . . . to have made language look messier, more fragile, less comfortably concordant with our needs, than before." (Ibid.)

Exact sciences with their nonverbal systems of mathematics stimulated more precise writing, with much less intellectual analysis. The brutalization of mass media and modern politics reinforces the intellectual self-destruction.

Information technology introduced a new way of organizing knowledge, eliminating browsing, and discarding material produced prior to its predetermined utility.

The understanding of books and the meaning of 'reading' is polarized between semi-attentive and pseudo-literary reading of the majority and 'full' reading of the minority, the distinction that resembles the elite of the past. The major difference is that in the past the elite held the power and served as an example in aiming at the culture as a whole.

"These attacks on traditional literacy, on the transcendental view of the artist and thinker's enterprise, and on the validity of language, constitute a fundamental critique of the book, It is not so much a 'counterculture' . . . but an 'after-culture.'" (p.123)

The author concludes, that "it is far more honest and far more productive to admit that the standards and ideals of full literacy are not self-evident, that they are not applicable to the majority in a populist society, that they represent a special skill." (p.125)

STEVENS, NORMAN D., 1986:

The history of information can be discussed ,in terms of five major themes. (1) Literacy: ability to utilize numerical, visual and computer information, (2) organization of knowledge, its systems and methods, (3) institutions and dissemination of information, (4) control and freedom as necessary elements in balancing rights of individual to free access and society's right to control it, and (5) the economics of information.

Till now library schools teaching was based on the concept of history of libraries as an institution, and on books as physical objects.

Shera began to deal with more basic concepts, stressing the importance of history of books in cultural, social and communication context of how ideas have been transmitted and how they influence human thought and behavior.

New approach calls for study of information as a separate discipline that contributed to society, and to the growth and development of civilization.

Philosophical aspects of information were discussed by some writers. (a) Dretske examined meaning of the concept in terms of fundamental ideas in communication theory, and theory of knowledge; (b) Nauta discussed the meaning of information in linguistic and semiotics context; (c) Machlap stressed economics of information; (d) Marxists considered information as a tool in regulating society; (e) Kochen distinguished between recorded data, information, knowledge, understanding and wisdom; (f) Davis and others reviewed information in the context of managing information systems; and (g) systems theory discussed decision making processes based on the information, focusing on what happened rather than why it happened.

"There is increasing reason to broaden the scope of the field and to create a discipline which has information its central focus rather than to continue to have a series of disciplines each of which argues that it is central to any study of information." (p.44)

STEVENSON, GORDON, 1977:

"The public library is based on a democratic principles which leave to the individual the right to respond to, and interact with, the world through whichever symbol systems are appropriate to personal and social needs, as determined by the individual. And this is the dimension of life which may be clearly beyond the realm of legitimate government intervention. But it has been traditional in the history of American public library that such intervention is thought to be one of the cornerstones of public library service. Research in popular culture, sociology and mass communications suggests that libraries may have to consider getting out of the business of culture altogether. If, however, an involvement with culture is a legitimate function of public libraries, then . . . [the] idea that people have a right to the culture they want, whether it is within their economic means to pay for it or not . . . constitutes a challenge to librarians to reexamine their cultural function. To intervene in cultural system, by advancing one system of culture (high culture) to the exclusion of others (most popular cultures) is not only undemocratic, it is probably a misuse of public funds and a betrayal of public trust." (p.223)

STICHLER, RICHARD N., 1992:

The code of ethics defines the professional status of the discipline. Professional criteria include: (1) specialized knowledge, (2) ethical standards higher than held by other members of society, (3) self-governance, (4) significant contribution to the society, and (5) special rights and privileges.

Rapid growth of the professions, white-collar crimes, and dependance on a market and customers preferences, weakened the concept of profession and public confidence in it.

Librarianship did not take the advantage of its historical role played in advancing intellectual freedom; this resulted in not developing cohesive tradition of self-governance and professional autonomy.

The two major responsibilities of librarians are intellectual freedom and selection of library material. ALA's definition of intellectual freedom is broad, advocating little judgment and results in selection policies fearful of censorship, and in giving patrons what they want. However, interpretation of intellectual freedom as giving people what they should have is arbitrary and subjective. The solution is to stress needs for library material that will contribute to the development and enrichment of human life.

"In a democratic and free society intellectual freedom is the foundation and substance of the common good: it is the capacity for the self-regulation of thought and action that is the moral foundation of political life." (p.44)

STIEG, LEWIS F., 1978:

Theory must be based on recognition of the library as a social institution with its primary activities to accumulate and transmit recorded knowledge, as social processes (Butler). Obstacles to library theory include shortage of general laws that both explain and predict, hence there is a need for humanistic base (Kaplan) and inclusion of analysis of its relations to the social forces that brought it into being.

The process is interdisciplinary (Rawski). The most complex issue is the institutionalization of library knowledge base into a professional service.

The influences of social forces on academic libraries are indirect, transmitted through parental institution; hence the boundaries of a theoretical base for academic librarianship must address both, libraries' role in fulfilling universities' goals and internal goals and services that the library develops for that purpose. The triad relates to Rawski's recorded knowledge, librarianship and use, and Shera's acquisition, organization and interpretation.

Often used is 'functional analysis', referred by Rawski as 'after-the-fact adjustment', a method in which a given arrangement produces given intended results. It is so because of inability to observe what happened and then reason backward to find why it happened.

Diversity of academic institutions suggests that there may be no separate theory for academic libraries. Common to all libraries is a basic purpose to support instructional, research and service functions of their institution.

The 'clinical-engineering' model of research (Ben-David) suggests that any theory should start with empirically grounded and intuitive explanatory model, checked against empirical evidence and the knowledge of the underlying processes, proceeding in an eclectic manner, and using whatever theory may be of help.

Rawski distinguishes between 'basic research' and 'ad hoc research'. Fussler focuses on general principles, Knapp on bibliographical instructions and Danton on systematic comparative research of the topic. All these approaches are based on the understanding of social structure and relationships between library organization and processes determined by societal factors.

STIEG, MARGARET F., 1986:

The pre 1933 German public librarianship developed two philosophies, expressing radically different views on almost all aspects of librarianship: (a) elitism, authoritarianism and collectivism versus relaxed, less rigid focus on individualism, and (b) library assisting in educational molding of characters versus library offering opportunities for self-realization.

The traditional approach reflected German precise discipline; the new school, based on Anglo-American model, was more practical, pragmatic and nonauthoritarian, open to outside influences.

"The mere existence of the two competing and irreconcilable groups weakened public librarians in dealing with the political authorities who controlled the resources essential for growth and development. The failure to consider the ethical implications of ideas and practices left the profession without intellectual resources when confronted with the Nazi challenge." (p.273)

---- 1987:

The relationship between information science and humanities is a critical intellectual issue. Learning divorced from its context is useless, while missing human perspectives is dangerous. Information is created and used by human who specialize by perceiving minute variations but who miss relations between them.

Humanistic education heightens sensitivity, develops an appreciation of excellence and critical thinking; it encourages individuals to develop their personal code of values and standards.

The question is what in information is worth pursuing or preserving. Ethical implications involve the issues of privacy, copyright, pricing, security, client relationship, and intellectual freedom.

The author calls for an information scientist to be an integrated individual responsible for the creation of information systems and policy, with ethical and intellectual sensitivity.

---- 1992:

Librarianship is now perceived as a process of fulfilling information needs; it stresses activity rather than the subject; it excludes the study of the physical book, its storage and preservation. The increased number of specialized libraries emphasize their differences rather than similarities.

At first the focus was on literature, changing in 1920'-30's to social sciences, now referred to as behavioral sciences. The foundation of the discipline was searched in the metasciences dealing with ideas provided not by people or nature, but by fields such as mathematics, logic, linguistics and information theory. To some librarians, however, the knowledge base depends more on understanding than on skills, facts and learning.

The relationships between librarianship and information science are considered as (a) identical in terms of broadly defined information, (b) information science as a branch of librarianship, stressing application of technology to library operations, (c) information science as the theoretical foundation for all information related professions, including librarianship, and (d) library-and-information science as a new discipline.

Large part of Stieg's book, not cited here, deals with library and information science education, primarily at the master's level.

STIELOV, FREDERICK, 1981:

The author calls for a demystification of the 19 century library mission. Some writers argued that college and university libraries progressed from the 'storage' phase to that of the 'heart' of the institution. The library was perceived as an independent educational institution, a laboratory of the university.

At the time, librarians were also concerned about their relations to the teaching faculty in their struggle for professional status and their uncertain relations with students, who avoided the library. They introduced library instruction to raise the status of librarianship.

The study of college development should be based on a multidimensional model, reflecting continuous interaction with other social agencies. The library was not arbitrarily established by university administrators, but evolved from preexisting form through interaction with other forces in the university and society.

---- 1983:

The essay reviews censorship in the three periods of American librarianship: Gilded Age to 1900, the progressive era to 1921, and the twenties.

The term censorship dates back to 5th century BC Rome, drawing its legitimacy from Plato's doctrine of the general good, enunciated in 13th century by Thomas Aquinas, and codified by Gutenberg's invention, followed by procedures for regulating the flow of information even before its publication.

A. Gilded Age: In 1870s censorship of book selection and removal was a basic policy. Emergence of mass press in the 19th century prompted various restrictive laws, dramatically expanded after the Civil War. The industrialization, urbanization and immigration contributed to the wealth but also threatened the stability, reinforced by Victorian anxiety to educate emerging proletarian class. Censorship becomes a means for ensuring the flow of 'correct' material, requiring a librarian to be a moral arbiter and custodian, controlling the flow of information. This attitude was strengthened by budgetary constraints limiting purchase to more desirable material.

The library role in the crusade for moral uplifts was passive, limited by its responsibility to respond to taxpayers needs for information, and to pander to common taste in order to encourage the use of the library.

B. The Progressive era. Anti-censorship was gaining strength, moving gradually from the elitist into 'scientific' rhetoric of the Progressives, but retaining the exclusionist stand on undesirable literature. Again a paradox existed between social reform movement, social regulations, scientific management, the push for civil liberties opposing puritanism, and a rise of 'yellow' journalism. Librarians were not in frontline of changes.

C. Twenties. The changing intellectual climate of modern novel and appreciation of continental culture after the War added to the ambience of the Twenties as the most contradictory age in American history. It is the beginning of modern library education, with librarians evenly divided on the issue of censorship. After 1922 movement toward civil liberties expanded rapidly; censorship, although not completely dismissed, was under criticism and challenged.

---- 1984:

The 19th century concept of censorship helped to define the librarians' professional responsibility for selection of library materials, based on the W. Learned's concept of 'when in doubt leave it'.

Protestant work ethics created wealth and leisure, culminating in the extremes of wealth and poverty, and moral reform movement of middle-class. The reform aimed at freeing citizens from their instincts through social conditioning, based on a belief in peoples perfectibility that could be accomplished through the manipulation of their environment, especially education. This lead to elitism, paternalism and racial attitude, considering censorship as a method of preventing moral deterioration.

Libraries supported the standards of the day by withdrawing from circulation the undesirable material, at the same time opposing censorship, redirecting attention to technical aspects of library operations.

The change into present philosophy resulted from the success of US as the nation-state, becoming less paranoid, allowing for some departure from expected standards, believing in an eventual cooption of different views into a status quo.

Present myth of freedom of information follows the mood of the nation but still maintains indirect censorship through devices such as the fiscal controlling mechanism, restricted shelving or children collections.

STIFFLER, STUART A., 1963:

The concept of book collection "poses a complex problem in applied social epistemology." (p.206) "The librarian must be sensitive to the evolving organization of knowledge, and to the interrelationship of the ideas, the events, and the broader themes which he is evaluating. This 'sensitivity' involves not only some sense of the logical organization of knowledge (considered an idea, event, or theme) but of the associative or analogical element which, since it is involved in research and imaginative thinking, is ultimately a factor in the analysis and selection of books." (Ibid.)

STOICA, ION, 1977:

"A large library is a space packed with ideas. Like some cosmic bodies of amazingly concentrated matter, libraries are places of a fantastic density and diversity of creative thoughts." (p.325) However, in spite of library importance, its potentials are not satisfactorily integrated within the university, because of the mutual theoretical ignorance between the teaching and library faculty.

The library is 'an extramural university with no teachers', playing a central role in the educational processes of a university, demonstrating an interdependence between the scientific level of the university and the library organization and performance.

"Considering, thus, the library performance as a specific form of the educational process, the place of the library in the system hierarchy can no longer be determined only by the function of the cultural value of its collection and services, but rather in close relation to the internal efficiency of independent study." (p.330)

---- 1986:

Information is neither a component or an ingredient of the research but an organic part of it, never complete, often redundant.

The research is always aggressively searching for new information; important is time and inertia, hence the organization of information must be elastic.

The library is practically defensive, serving as the main reference guide to all information-related issues. Its primary function is preservation of knowledge, not dissemination of information.

STOKES, ROY, B., 1967:

American library education resembles "the trading stamp mentality. Each course is good for three units; stick them in the book at the end of the semester or trimester, and when the book is full it can be traded in for a master's degree." (p.3598) The emphasis is on the fulfillment of regulations rather than on the mastery of the subject, and the doctoral program is a union card for academic opportunities.

The author is not interested in the philosophy of librarianship. "If one is desirable . . . it has no relevance unless it affects what is eventually done on a job." (p.3600) "Librarianship is essentially a practical profession." (ibid.) "It has as much need for good craftsmanship and as little for highflown theory as has the job of digging a hole in the road." (Ibid.)

---- 1969:

The university has three distinct aims: (1) teaching, (2) research and scholarship, and (3) personal development. The modern library assists in accomplishing those aims, although the tools for teaching are changing, and the research material is expanding.

There is no need to add the words 'information service' to the traditional definition of librarianship. "Information was retrieved from clay tablets at Nineveh . . . and has been retrieved by librarians working in libraries and not centres of documentation or scientific information retrieval organizations from time immemorial. What has changed is not the basic concept of the profession . . .. but the machinery . . . called 'hard-ware', which is being applied to the task. To it have we added the complication of the most pedantic phraseology that our profession has ever had to face." (p.16)

STONIER, TOM, 1991:

In this essay together with the previous paper published in 1989 ASLIB Proceedings, the author examines information as a physical phenomenon in the following framework: (1) It is a basic property of the universe as real as matter and energy. (2) The more organized the system the greater is its information content. (3) The entropy of the system is a measure of its state of disorganization; entropy and information are inversely related.

The perception of the world is the product of historical experience. Pre-seventeenth century civilization considered time as a vague, cyclical concept. An invention of the pendulum redefined time in terms of small, repetitive, linear units; the concepts of 'passing' time and 'continuity' followed. Experimentations with energy lead to the science of thermodynamics, and emergence of a computer and its use in processing information lead to the information science.

All organized structures contain information. For example, DNA carries information that can be transmitted from generation to generation, and the message is understood by all forms of life from bacteria to human beings. The amount of information may vary, but the method of coding it into DNA is the same; information can also be transmitted from one organism to another. Entropy expresses disorder, which always results in changing the information content of a given system.

Shannon used information as a metaphor for an abstract factor in communication process. He measured the changes in the 'abstract' phenomenon, called information, by the degrees of organization or disorganization; to him 'information' or entropy is low when the situation is highly organized, it has only limited randomness of choice.

"Meaning is achieved when the perceived information can be put into a context . . . information becomes meaningful only if it can be analyzed, compared and integrated with other information which already exists within the perceptor system." (p.261) "Intelligence is a property of advanced information system . . . at the bottom end, pro-inteligence merges with true intelligence. At the top end, human global society represents the epitome of a more generalized phenomenon: collective intelligence. Proto-intelligence is exhibited by certain crystal systems and various forms of machine intelligence." (Ibid.)

STOVER, MARK, 1984:

Librarians are involved in two, sometimes conflicting freedoms: freedom from censorship of books in the library collection and freedom to protest library selections in a form of a social protest by the members of library community.

There is a need to distinguish between the absolute censorship questioning the collection development policies of the library, and the occasional censorship of individual titles. The second type of censorship is usually a result of poorly defined policies that can be avoided by better definition of the goals of collection development. "A philosophy that labels every book challenge as wrong precludes the notion that a protester might possibly have a valid concern." (p.914)

STRONG, GARY W., 1982:

Classical engineering theories of information involve the reduction of uncertainty: more uncertain the event, requires more information. In human information processing only a significant part of the environment is selected.

"Human pick up information directly via perceived environmental invariance. This point of view inverts the idea of information from that of uncertainty to that of certainty (invariance). It also points out the importance of a topological, or relational kind of information not amenable to bit analysis and previously ignored by information researchers." (p.402). Thus, human as independently behaving, are pattern-generating systems that utilize two kinds of information: (a) about the environment, and (b) about behavior in that environment. They organize their internal representation of the outside environment by the behavior-constructed patterns. Models of human information processing ought to agree with neurophysiological as well as psychological, behavioral data.

STUEART, ROBERT D., 1981:

"Traditionally, education has consisted of the transmission of knowledge and skills from a teacher to a student. Now education should be viewed as a process of acquisition of knowledge, skills, attitudes, and values by a learner with help from a facilitator." (p.1990) This is expressed in the adage 'if you teach a person what to learn you are preparing for the past;

if you teach them how to learn you are preparing for the future.' (Ibid.)

SUEDFELD, PETER, 1971:

"From the information processing viewpoint, the essence of the organism's interaction with the world is the identification and acquisition of potentially useful stimuli, the translation and transformation of the information received into a meaningful pattern, and the use of these patterns in choosing an optimal response. " (p.3)

In the past psychology focused on the study of memory, thoughts, and perception. Epistemology investigated the processes of knowledge build from external stimuli. Change from philosophical to psychological approach was signaled by the shift to experimental study of cognitive processes. Gestalt school was interested in the transformation and organization of perceptual and cognitive mechanisms. Computers, by simulating human cognitive behavior provided tests for the theoretical speculations.

The focus changed from the content to the structure of the cognitive mechanisms and to issues such as input flow, avoidance mechanisms or assimilation and accommodation. The teleological notion of purposiveness, the role of ego affecting unconscious stimuli, reward values of information processing efficiency, the learning processes and genetic factors were topics of increased interest to the information psychologists.

The theories included individual unique cognitive styles shared with other people and the relationships between external and phenomenal environments, reflecting both the objective and psychological realities. In most cases the issues of emotions, interpersonal relations, morality, and ideological aspects of personality were set aside in favor of preferred unemotional model of a computer.

SUMMERS, F. WILLIAM, 1991:

Although some libraries have adapted to the new technology that adaptation, in many cases, has not been reflected in new philosophy of user service. "Most technology today has expedited discovery of bibliographic or other kinds of information, but little has been done about improved access or delivery. In practice the research library model is still the self-service model, with the user coming to the library for actual service delivery." (p.211)

SUPPE, FREDERICK, 1985a:

"With the advent of large general-purpose electronic digital computers the scope of science has widened not only to include the 'science of the artificial' but also to explore the relations between natural and artificial systems . . . [providing] profound insight that many if not all systems, whether natural or artificial, can be constructed in terms of the communication, control, representation, storage and manipulation of information." (p.7)

"This in turn led to another insight: that the very practice of science is an interaction between information systems - the scientists and the phenomenal systems they interrogate and study. Thus not only the world but its study by man can be constructed in information-processing terms." (p.8)

In Shannon's information theory communication aspects of information are not much discussed, its syntactical level is not expanded into adequate pragmatic theory, and new developments such as logic of question and answer or artificial intelligence, are of not much interest. Hence, Suppe claims that "Shannon's information theory, or any of its obvious extensions, will play a relatively unimportant role in a comprehensive general information science - and thus has little potential for contributing to the development of such a science." (p. 9)

---- 1985b:

The author opposes the traditional notion that scientific methodology is theory-neutral. What is observed is conditioned by background knowledge, linguistic abilities, cognitive processes and the causality of the observer's contact with reality.

The neutral observation thesis is central in operationalist approach to behavioral sciences, in which dependent and independent variables belong to the observation language with intervening theoretical variables and hypothetical constructs.

In Shanon's theory, signals send are independent, those received dependent, while variables, and the noise are the intervening theoretical component. An observer receives a noisy message, which is filtered and interpreted. Much of the noise is introduced after the message leaves the communication channel.

By expanding the concept of communication channel to include the recipient's cognitive and neurological processes, one postulates with Descarte and Locke that end product of perception is free of noise, thus reintroducing neutral observation language.

'White' noise is random, non-systematic with the signal, the message and the noise source are statistically independent of each other. 'Black' noise, is the alterations, distortion received as a part of cognitive, linguistic and causal processes of observation and perception; it is systematic, and interrelated.

Noise filtering theories in information science focus entirely on white noise, hence a comprehensive theory of information will have to treat the filtering of black noises as a fundamental problem.

Theory-ladden observations are based on physiology and psychology of perception; an observer does not simply see phenomena, but always 'see as', interpreting own sensory experiences in light of expectations, prior experiences and theoretical commitments. The observer sees different things in response to the same sensory stimulation. Hence observation is influenced by individual's own background.

SUPRENANT, TOM, 1983:

In the series of short essays, the author discusses the role of automation in future libraries. He defines artificial intelligence as the ability of the machine to process or perform functions normally associated with human intelligence. Robotics refer to machines that perform simple tasks such as retrieving and shelving library materials, reading shelves and inventoring.

The author concludes that (a) artificial intelligence is not the technology but a philosophy, a world view creating a challenge to the profession's humanistic value system, (b) new technology will amplify human mind, duplicating experts thought processes, by weighing all alternative answers to problems, and (c) the new knowledge base will include facts, prejudices, beliefs and heuristic knowledge.

"If the technology lives up to expectations, there will be little left for the libraries to do once artificial intelligence systems are in place. At best, advances in the field will move the profession away from context with the user and toward a concentration of efforts on system development and maintenance." (p.237)

SWAN, JOHN C., 1984:

"The past, however recent, has integrity, a content of its own. This means that our responsibility is not only to the storage and retrieval of a record, but to the integrity of its content. The responsibility to memory is not a debt to a dead past. We connect people with the past, the connection makes the past live, and the living past is an essential root of sanity, of individual freedom. This is true, whether the past is embodied in a novel, a picture, a piece of old news, or a chemical registry number." (p.1998)

---- 1988:

Variety of new terms applied to librarians, such as 'information specialists' or 'gatekeepers', are misleading. The issue is not how we use the information technology, but what is our basic relation to information. The concept of librarians is less and less distinct from that of a computer specialist.

Knowledge is orderly and cumulative; information is random and miscellaneous, often driving knowledge out of circulation. The flood of information results in radical disconnection.

Libraries will become archives or museums, with little of public service. Librarians will be specialists in different subjects as information analysts or consultants. However, as knowledge continues to multiple, there will be a need for expert collections and technical processing. Public librarians will work with poorer clientele resembling information welfare workers.

The essential role of a librarian to connect people with information will remain. However, by itself it will contribute to revolution in information management by aligning librarianship with the goal of information efficiency. Resources will be relocated to automation and computer to provide savings in space, preservation, etc.

The relationship between professional identity, managerial power and new technology will destroy our unique strength as 'cultural generalists' providing human context for information itself. This contrasts with the selectivity in the use of information by professions such as physicians or lawyers.

Librarianship may counter the decontextualization and disembodiment of the electronic metamorphoses of information, by stressing contextual difference between information and knowledge expressed in the degree of connectedness, perspective, and human values, and by exposing patrons to the broadest cultural context.

SWANK, RAYNARD C., 1963:

The author lists six characteristics of American librarianship as valuable for export: (1) the concept of a library as an organization of books, (2) the library profession, (3) focus on service, (4) the educational role, (5) advancement of intellectual freedom, and (6) responsibility for organization of information as a public resource.

These characteristics are not exclusively American, they emerged from the long evolution of librarianship in many countries, but Americans enriched these principles in developing the American library profession. Furthermore, American contribution to librarianship is only one of the many contributions made by librarians all over the world.

SWANSON, DON R., 1964:

Intellectual foundations of librarianship are related to the goals of the discipline; they should be formulated in the context of users' needs and behavior and distinguished from the means to accomplish them.

Issues to be considered include: (a) relationship between the library and its user, (b) library as an agency of culture, (c) its role in disseminating published material, (d) profile of the reader, (e) types of communication channels and their significance, and (e) importance of speed of library response to requests for resources.

Once goals are established there is a need for studying available resources, equipment, automation, costs of implementation and implication for library education.

Conceptual issues in intellectual access to information encompass: (a) intellectual processes in indexing and classification, (b) role of browsing and indexes, their relevance and need for control, (c) relationship between retrieval effectiveness and depth of indexing, (d) common elements in different library specializations, (e) books selection, optimal allocation of resources and criteria in evaluating quality of collection.

Such issues can be addressed by philosophers, sociologists, mathematicians, engineers, classificators, bookman, librarian, documentalists and information scientists.

---- 1976:

This paper examines three information retrieval experiments, evaluating retrieval systems in terms of their ability to select relevant and reject irrelevant documents. It is suggested that this criterion is inadequate because of ambiguities of relevance.

The author makes the following observations. (1) The retrieval of irrelevant documents may be significant in stimulating a further search. (2) Distinction should be made between two frames of reference related to relevance: (a) meaning of relevance is considered in the context of individual searching of the document, not as an issue of a consensus, and (b) relevant meaning is viewed as syntactic relationships between individual subtopics. (3) Trial-and-error is central in document retrieval processes. (4) Trial and error process is a means for enhancing the correctibility of the request: there is a need for rapid delivery of requested information so that it can be quickly rejected. (5) Trial-and-error method in librarianship: (a) stresses the importance of an open stack to classified collection, (b) suggests a limited circulation policy to allow for browsing, and (c) it emphasizes the importance of citation indexes.

---- 1979:

Central to librarianship is the problem-oriented methodology of providing access to recorded information which facilitates the growth of knowledge. It is a trial-and-error approach based on Popperian concept of objectivity.

The rational of that methodology for librarianship are based on: (1) identification and understanding of problems to be solved in librarianship, (2) critical analyzes of existing solutions, (3) discovery of obstacles to the solutions, and (4) invention and verification of proposed solutions.

Knowledge is discussed not in terms of subjective, private knowledge, but in the context of Popperian objective knowledge. It is defined as that which in principle can be known subjectively by human beings. It "derives not from the objectivity of its creator, but from its public character and its accessibility to criticism and to logical argument." (p.5)

According to Popper" we gain knowledge of the world by solving the problems it poses, by making guesses and eliminating errors." (Ibid.). Since no general laws can be known in advance, knowledge evolves from the critical evaluation of previously known knowledge by trial and error method. Scientific knowledge is subject to testability (falsifiability) that distinguishes it from metaphysics.

To improve library and information science performance "we should: (1) begin by identifying the fundamental problems of access to knowledge that libraries are intended to solve; (2) create conditions that foster correctability through the evolutionary mechanism of variation and selection; and (3) enhance the regulative mechanism of the market - that is, the mechanism by which one eliminates useless, and encourages useful, information services and products." (p.20-21)

---- 1986:

Knowledge can be public, yet undiscovered, if its parts are logically related but not retrieved or interrelated. Hence search process cannot be fully satisfactory.

Popper distinguishes between three approaches to the understanding of reality. (1) A self-critical approach is based on the notion that the essence of science is self-criticism, not its objectivity or truth. Scientific laws and theories are not derived from observed facts or data, but from conjectures or inventions, subject to rejection if they do not reflect reality. The model of three kinds of reality consists of physical World 1, its personal, subjective mental knowledge of World 2 and objective theories about World 3.

Information retrieval is incomplete, and problematic: (a) the quantity of published information is larger than one person can read, and (b) some knowledge is undiscovered because of limited ability to index, organize and retrieve information. Hence information retrieval is always uncertain and open-ended. This incompleteness is addressed by Popperian trial-and-error and falsification methods.

SWANSON, E. BURTON, 1987:

E.B. Swanson proposes a model for information system that consists of three fields: computer, management and organization sciences.

Computer science provides: (a) data that are essential in any organization, (b) software based on information processing language, and (c) hardware that interacts between data and software.

Management science provides normative foundations for information system by means of models describing the relationships between data, algorithms and heuristic technology for interpreting these models. Organization science provides descriptive and explanatory functions in the information systems. It includes the study of individual, organization and institutions.

"The three supporting fields may be linked to the support system of a simple, three-legged stool. Each leg is required to support the weight to be imposed on the stool. Significantly, the two legs (management science and organizational science) are most often positioned within management (or business) schools. The other (computer science) is placed elsewhere, typically in a letters - ans - science or engineering schools." (p. 34) The system is further dependent on social sciences, mathematics, engineering, philosophy, and systems sciences.

SWIFT, D.F., 1974:

"It is important not to confuse (1) a view of the user as free to choose from a stock of 'taken for granted' meanings, and (2) a view of the user as free to construct meanings and to impose them on documents." (p. 281) There is a need for "a scheme of intellectual organization which describes documents in terms of the dimensions on which knowledge comes to be structured." (Ibid.) "Concepts are not unitary, and their definitions unpack into a number of elements which reflect various assumptions about the nature of the subject matter under study." (Ibid.) "It is in terms of differences in assumptions such as these that documents need to be classified, leaving users free to construct their own definitions, and select documents on the basis of consonance with elements in their particular definition." (Ibid.)

SWIGGER, KEITH and FRANK L. TURNER, 1986:

Education in the principles of librarianship should be broad, reflecting the whole philosophy of the discipline. Instead of a textbook for the course, authors suggest the use of Plato's Republic as the initial 'base book.' It is encyclopedic, addressing variety of issues, and illustrates the use of the system approach and analysis. "Much of the art of system analysis lies in the use of questions to help people articulate what they know and to get at fundamental assumptions." (p.56) "Questioning and question analysis are major functions of information professionals in reference interviews, in collection analysis, in library and information center management and maintenance, and in research." (Ibid.)

Dialectic method is interdisciplinary and overcomes disciplinary barriers to communication. The content of The Republic is timeless, addressing issues such as censorship, distinction among individuals, the distribution of power and responsibilities of different social roles. This approach may serve as a tool in solving many library problems.

- T -

TAGUE, JEAN, 1979:

Information science is defined as: (a) a science that deals with the generation and transmission of information, publication, storage, organization, transmission, retrieval, and evaluation, (b) a discipline that transforms structure of any text, by changing its image in the recipient, (c) a variety of meanings which must be restated as either reduction of uncertainty caused by communication data or as data used for reduction of uncertainty, (d) a surrogate of knowledge or thought, (e) lists of topics binding or separating them; and (f) the problems it attempts to solve or the phenomena it investigates.

Broad studies of information science include distribution of social information, and sociological and philosophical aspects of knowledge, with an overview of the flow of information and society's access to it.

Library and information science educational programs should be integrated in one curriculum. Information science is concerned with the scientific foundations of the work of libraries, the characteristics of public knowledge and users behavior. Librarianship is concerned with all aspects of library operations and practice.

The author warns that too closely integrated information science will weaken its essential nature as analytical, technological, quantitative, and research based field. Yet the alternative of a too close association with computer science and business schools is equally undesirable, since these have only a limited relationships with information.

TANIS, NORMAN, 1983:

ALA code of ethics is compared with one formulated by National Librarians Association (NAL). The latter stresses free access to resources, opposes fee for service and focuses on librarians' personal motives in selecting vendors, their role in participative management, employees supervision, and peer review - subjects not mentioned in ALA code. "NLA's code shows more concern for users, librarians, and abstract consideration." (p.2)

TAUBE, MORTIMER, 1941:

Taube is considered by some librarians as the first philosopher of informatics."The theory of book selection is the branch of the general theory of value since it is concerned with problems of choice and discrimination between competing values. Like ethics, aesthetics, or any other branch of value theory, it has two aspects, the descriptive and the normative. The descriptive part of the theory attempts to present a discussion of the bases of choice that are actually operative in practice, of the considerations that determine the selection of this book rather than that. The normative part is considered with what ought to be the basis of the decision in the light of general decisions concerning the objectives of libraries, the purpose of reading, or the aims of education and scholarship." (p.221)

In the book selection, each book has five independent values: additive (quantitative), reference (consultative), critical (selective), documentary (scholarly) and monetary (market) values.

TAUBER, MAURICE F., 1957:

The issues addressed by library research are summarized as follows: (1) Important in background research are social, cultural and other influences upon librarianship. (2) Research that barely begun includes philosophy of librarianship and libraries relations to government and society. (3) Good beginning was made in library history, bibliography, content analysis, storage of information and retrieval. (4) Research is needed in media, mass communication, library management, service to the individual, available resources, standards in descriptive cataloging and classification on national and international levels, library education, and methodologies of other disciplines.

TAYLOR, ARLENE G., 1944:

Author points to the paradox of the computer specialists using library analogies in their work, while saying that library organizational methodology is passe, and that library technical services are outmoded.

Taylor blames the present library terminology for that perception. The terms 'bibliographic control' should be changed to 'information organization'. Information is defined as "anything taken into the brain through any of the five senses." (p.629) Information organization consists of: "1. Recording the existence and identity of all types of information-bearing entities, printed or otherwise, as they are produced . . . 2. Systematically acquiring these information-bearing entities in libraries, archives, archival Internet communication files, and other depositories . . . 3.Providing name, title, subject, and other useful access to information-bearing entities . . . 4. Locating copies of the information packages." (pp.630-631)

TAYLOR, KENNETH I., 1968:

The Instructional Materials Center (IMC) is defined as "a school department which supplies well-selected curriculum-related printed and audiovisual materials for students and teachers." (p.165)

A theory is proposed "which attempts to give meaning to recent changes in education and the rise of the IMC. The premise of the theory is that the basic function of the IMC program is to support school-wide independent and group inquiry. Creative inquiry is accepted here as the major contemporary school objective. It is believed that by beginning with an examination of the nature of creative inquiry and of the conditions needed in a school for it to flourish, one should understand more clearly the collections, equipment, and facilities that are required in the IMC."(Ibid.).

TAYLOR, ROBERT S., 1963:

Information is defined as "knowledge communicated or received concerning some fact or circumstance." (p.4161)

Information science study the properties, structure, and transmission of specialized knowledge and development of methods for organization and dissemination of information. It bridges the gap between theories in communication sciences and retrieval application on theoretical and operational levels.

Information science adapts four approaches: (1) logic and mathematics concerned with theoretical organization, explanation and prediction of information retrieval, (2) behavioral sciences with a focus on psychological and sociological aspects of technical and scientific communication, (3) linguistic aspects of natural and artificial language as a vehicle for the transmission of knowledge, and (4) systems attitude in evaluating the organization as a whole, its costs, processes and effectiveness.

---- 1968:

Library patrons can express to the librarian their need at four levels: (1) visceral, actual but unexpressed need for information, (2) conscious description of a need, (3) formalized need statement; and (4) compromised need expressed in the actual question asked.

The reference librarian attempts to determine the patron's (1) subject of interest, (2) motivation, (3) personal characteristics, (4) relationships between the inquiry and library file organization, and (5) anticipated answer.

The above statements have been in part an elaboration of the obvious, but also restructured to open new ways of interpreting the negotiating relationships between reference librarians and their patrons.

--- 1973:

New means adapted for old ends may result in changing the ends, as illustrated in the shift in librarianship from book to communication business. The issue is not of invention or availability but of acceptance, suitability and adaptation, based on professional attitude, economics, professional capabilities and changes in education, publishing, telecommunication and computing technology.

Acceptance of innovation affects book-based approaches and process of reading. Information retrieval system is structured on the top of library system without considering what kind of communication system is needed. Similarly, library automation merely refines library routine practice. This overconcern with automation today, like the preoccupation with techniques of cataloging in the last century, alienates the user.

The library must change the communication resources from print to sound and image records. Paperbacks offer an inexpensive substitute for the library book, copying may facilitate prompt return to the 19th century non-circulating library, while the computer customized service will reinforce the notion of 'invisible college', and the emergence of commercial services that will substitute for library book-centered approach.

The library may become: (1) a user-subsidized warehouse with seating capacity, (2) a computer-centered switching system connecting user and resources, or (3) a symbiosis of people and communication systems, with computer producing, controlling and manipulating records, and library becoming a mediating institution between users and knowledge in and outside the library collections.

---- 1977:

The information science curriculum should include the following subjects: (1) information organization and retrieval based on patrons needs, (2) the information environment, its history, context and processes, (3) information media, formats and organization of messages to be stored and retrieved, (4) systems and technologies analyzing and designing relationships between people, messages and machines, (5) critical evaluation of research methods and (6) information management interrelating together all the above subjects in the context of human behavior, efficiency, effectiveness and fiscal aspects of operations.

---- 1986:

Value-added concept is defined as a frame of reference for analyzing information systems. It is a means of describing information system in terms of its interface between the praxis [practice] and technology, content of the information message and its user.

Value-added concept considers merits of information system in terms of (a) signaling potential value of the message, (b) ability to combine and interpret information content of a message, and (c) its adaptivity to the user's needs. Value-added activities consist of processes that produce and enhance the utility of messages.

The author identifies 23 activities, and classifies them into 6 categories: (1) ease of use, (2) noise reduction, (3) quality, (4) adaptability, (5) time saving and (6) cost saving. All these activities are either tangible or intangible, and can be discussed in terms of their application to 4 types of libraries: research, college, public and special libraries.

Value-added model: (1) focuses on (a) system output: it is user, productivity and service oriented, (b) it combines technology with human expertise; (2) it is valid regardless of the medium, subject matter, or technology; (3) it is based on the definitions of function - purpose - and a hypothetical user; (4) its purpose is to organize ways of thinking about effective means of moving information through organized sets of processes; (5) it provides means for converging systems of thinking with systems planning; (6) its benefits are greater than its technology, efficiency or costs;(7) it assists users in making their choices, by clarifying messages and processes of information.

Value-added processes in libraries are defined as 'document-based systems'. They provide 'books to be read' and include: (a) physical access to resources, (b) intellectual access (e.g., rules of cataloging), (c) formats (e.g., signs, or graphics, and other visual aids), (d) mediation (interfacing) and collections development.

TEMPLE, PHILLIPS, 1949:

The author defines the library as "the art and science of reducing to order the various forms of the recorded word and idea, and of manipulating them for a definite purpose. This definition involves three basic components: library techniques, administration and philosophy." (p.36)

The philosophy of librarianship can be considered in terms of its proximate or ultimate ends. "The proximate end is defined in terms of the clientele served, and the ultimate end in terms of the institutional philosophy of which the library is an expression." (p.37)

The aim of the Catholic library, in addition to training for the temporal order should be conceived in terms of eternal and supernatural order.

TERBILLE, CHARLES I, 1992:

The author discusses the viewpoints of Douglas Waples's pragmatic empiricism, Bernard Berelson's behavioral approach and Pierce Butler's humanistic philosophy.

Waple's approach was based on John Dewey's philosophy of 'learning by doing', concerned more about new discoveries than about the assimilation of old theories. A pragmatist in his practice of research, he stressed the difference between the inductive hypotheses and deductive propositions, with research aiming at confirmation or refutation of facts, conditions or relationships.

Berelson proposed an objective, behavioral methodology in the study of human behavior in preference to the subjective, reflective philosophical approach. This methodology, he claimed, is publicly available, systematic, cumulative based on objective data collection and on replaceable findings - aiming at the explanation, understanding and prediction of behavior.

Terbille note Patrick Wilson's (1978) criticism of this approach for its focus (a) on public procedures that excludes interacting private experiences, (b) uninterpreted objective evidence, (c) replicability independent of other things being equal, and (d) symetricality of prediction and explanation.

Butler rejected behavioristic interpretation, stressing instead the importance of technological, scientific and humanistic cultural approach. His metaphysical interpretation was influenced by Josiah Royce philosophy expressed in the dichotomy between phenomenal and noumenal realities.

In his epistemological interpretation of knowledge, "Butler is not rejecting science, but rather the innuendo that only physical science is valid knowledge [in which] observation is independent of theory. His philosophy thus resembles recent antibehaviorist position." (p.307)

To him science includes "(1) collection of data by observation. (2) Explanation in terms of immediate causality. (3) Evaluation by the process of integration." (p.310)

Butler considered definition as the goal rather than the beginning of the inquiry, and as searching for the purpose rather than the method of defining the subject of research.

Library science, in Butler's terms, relates an individual's irregular experience with the society's regular cumulative experiences. "Thus one may generalize about the needs of readers in the aggregate, but such generalizations do not determine what an individual reader wants or needs . . . knowledge of the causal structure of human motives can usefully be combined with knowledge of the individual case at hand." (p.311)

THOMPSON, C. SEYMOUR, 1931a:

"The chief need of the library profession . . . is the revival of the bibliothecal spirit. This can be brought about without sacrificing anything that we have gained in perfection of method, in practicality of service, in efficiency of administration." (p.583)

The effect of contemporary insistence on adopting the methods of scientific research "will set up false ideals. It will divert the attention of the profession still further from the need of better educational equipment and greater knowledge of books. It will inspire large number of librarians . . . with a desire, not to become better librarians in the sense that has been honored by long and praiseworthy tradition, but to become known for a bit of scientific research . . . we cannot develop in the library profession a body of scientists; we can develop only a body of dabblers in imitation science." (p. 586)

---- 1931b:

"Librarianship is primarily an educational profession, endeavoring to provide for 'the diffusion of knowledge of good books'. Therefore, the most important qualification for librarianship is 'a knowledge of good books', with high standards of general education." (p.343)

The proponents of the scientific research "have not yet demonstrated their value so conclusively that we must necessarily accept them as a model." (Ibid.)

"It is easily possible to exaggerate the importance of 'what subjects people want to read about' as an indication of what the public library should strive to provide and induce people to read." (p.344) This approach is based on "the serious fallacy in this hypothesis on which the entire investigation is based - the idea that the questionnaire is a reliable method of ascertaining what people really want to read about to any greater extent than is made easily possible by magazines, newspapers and tabloids." (Ibid.).

THOMPSON, JAMES, 1974:

"Major premise . . . is that libraries are a source of power, this power deriving principally from the fact that libraries are the storehouses of knowledge and the repositories of the records of mankind's achievements and discoveries . . . any philosophy of librarianship must be firmly based on a full appreciation of this power of libraries." ( p.110)

There is a need to create "an elite corps of librarians, who are well-educated and committed . . . structured democratically, and that the task they perform should be limited to those which can be truly regarded as librarianship [only then it will be possible] to interpret successfully the role of the library in society, education and culture." (pp.110-111) The book was criticized for its call for elitism, and for overlooking the real power of the library users.

---- 1977:

The author lists a number of principles of librarianship. They are created and conserved by society for the purposes of storing and disseminating knowledge.

Libraries are centers of power, because they store knowledge that is power. They are accessible to all and must grow by increasing the stock of each library, since the size is critical in fulfilling their mission. National libraries should contain all national literature and some of the literature of other nations. Every book is of use sooner or later.

Librarians must be well educated through apprenticeship, performing an educational role, integrated into the existing social and political system. Libraries must be orderly, arranged with a list of its content and a subject catalog based on the principle of convenience.

Thompson was severely criticized for poor documentation, dependence on secondary sources and for claims to philosophy of librarianship based on simpleminded principles.

TOFFLER, A., 1980:

"If the last 50,000 years of man's existence were divided into lifetimes of approximately 62 year each there have been about 899 such lifetimes; of these 650 were spent in a cave.

Only during the last 70 lifetimes it was possible to communicate from one lifetime to another through writing. Only during last 6 lifetimes did masses of men ever see a printed word. Only during last 4 lifetimes has it been possible to measure time with any precision; only in the last 2 has anyone used an electric motor. The overwhelming majority of all material goods used now in a daily life have been developed in the present, the 800th lifetime." (p.15)

TRAUE, J.E., 1989:

Essential aspects of the information society already existed in Aristotle's time. The 'Alexandrine imperative' to record all knowledge in writing is characteristic of all literate societies. Once written down the texts could be compared and criticized, leading to better interpretations.

"The process of comparing and contrasting began as soon as collections of written records were accumulated . . . the breakthrough came in Greece from the sixth to the fifth century. Not because the Greeks had superior intellects but because they had developed . . . easy system of writing . . . and achieved a critical mass of literate people . . . Information society was born with writing." (p. 18)

"The changes in communication are the forces that drive human societies, that bring about change and determine the very nature of that change, not methods of production, not economics. There at the centre of all this is the library, the essential instrument for the comparisons which first set us off on the search for truth that is by its nature never-ending." (Ibid.)

---- 1992:

"We have moved on from Francis Bacon's view that the facts will speak for themselves, that the careful accumulation of verifiable data will automatically reveal the great truth about nature, to a recognition that facts, information, and data are all the servants of ideas. Without the ideas we don't even know where to go looking for the facts; ideas effectively determine what we are going to regard as relevant facts." (p.33)

The author is also concerned about the confusion between ideas, knowledge information and data, and particularly, about the inability to "differentiate between 'information-in-book', that is the ideas, data, or whatever that is ensconced in a physical carrier, the book or periodical, waiting to be translated into knowledge in a human mind, and bibliographical information, the bibliographical citation that are surrogates for the 'information-in-book', created by librarians in an attempt to gain bibliographical control over the ever-expanding universe of 'information-in-books'. Bibliographic citations are very useful abstractions, but they are not the real thing, merely pointers." (Ibid.)

TRIBUS, MYRON, 1983:

Information theory influenced by Shannon's can be used in three ways: (1) as a criterion for the choice of probability distribution, (2) as a determination of the degree of uncertainty about a proposition, and (3) as a measure of the rate of information acquisition.

Scientists and engineers either discover or invent laws of nature, thus explaining everything in terms of things already known or by introducing new axioms.

The impact of the computer goes beyond its ability to do sums; its idea of an algorithm can be applied to social decision influencing people's thinking about uncertainty and public risk-taking. The approach can measure transmission of information through sensory channels. Hence, the engineering concepts can be subsumed as special cases of social sciences.

TURNER, JUDITH AXLER, 1986:

Changes in business schools that resulted from technological revolution are window dressing. There is no general theory of information technology, so the curricula include mere observations about how information seems to influence business.

There is an attempt to develop 'economics of information' based on a notion that information is a resource, like land, labor or capital, although its value depends on who uses it, it cannot be used up but it can be outdated.

Presently a number of departments called 'management' or 'information systems' have no theoretical base and hence they lack "the status of an academic discipline. 'It's a practice in search of theory'." (p.29)

- U -

URICCHIO, WILLIAM, 1994:

Although the author agrees that most of the issues related to social awareness of librarians are legitimate, "our involvement with social responsibility should be limited to that which allows us to achieve our pressing service and objectives." (p. 576). The social issues in other countries, "except as they directly affect our business, are best left to critics who know what they are talking about and whose words will have a meaningful impact." (Ibid.).

URQUHART, DONALD, 1981:

The essay discusses eighteen principles of librarianship. (1) Libraries are for users. (2) Failures of information systems to satisfy users needs are not obvious. (3) Supply creates demand. (4) Users must be guided in selecting needed records. (5) Libraries must provide adequate access to required records. (6) Libraries have to be paid for. (7) Libraries must have regards for cost-effectiveness. (8) Information cannot be valued in monetary terms. (9) Libraries must have regard for the law of diminishing returns. (10) The best is the enemy of the good. (11) Unit cost of a particular activity should decrease as the magnitude of the activity increases. (12) No library is an island. (13) Planning library development should be based on objective data about users requirements. (14) In using new technology and systems it is necessary to look into future, not the past. (15) Library staff should work as a team. (16) A librarian's post is not a sinecure for a scholar - a librarian's task is often to facilitate the work of scholars. (17) Libraries can be valuable to a society. (18) Librarianship is an experimental science.

Laws of librarianship denote relationships, not all principles are laws and not all laws are principles. These relationships cannot be defined mathematically. Law of supply and demand depends on the user's expectancy and convenience.

The law of diminishing returns has no precise formulation: when it is operational it results in unit costs increasing as the resources increase, and it applies to most of the library activities. However the point at which it starts to operate, and the changing rate at which the extra returns diminish, can only be determined by observations.

In the past decisions on what ought to be done depended on opinions; some scientists believed that their opinions were sufficient to guide library decisions.

There is a difference between investigation and research; research in natural sciences means the use of scientific methods, social scientists learned how to use statistics but not when to apply them.

It is important to put research into librarianship and information science on a firm basis, by defining the aims of the research to (a) increase the flow of information to the user,

(b) to improve the cost-efficiency of the information flow arrangements, and (c) to test the research applicability in practice.

The concept of 'fundamental research' could be concerned with the work of individuals' brain in relation to information stored in the memory.

US DEPARTMENT OF EDUCATION, 1988:

This report contains a number of questions related to the impact of changing technology on library and information science.

How do libraries fit into 'information society'? Which of the traditional library roles must be preserved? How can the library function as a center of intellectual activities in a community? What is the library role in lifetime learning, education, socialization, as community symbol, preserver of tradition? What is the commonalty among types of libraries? Should the library have a portfolio of functions instead of a mission statement? Should the library maintain an environment conductive to serendipity and conviviality? What are the factors influencing changes in library roles, and how libraries assimilate new roles? If there were no libraries, how would we design them to accommodate many factors?

Answers to these questions are provided from different perspectives determined by: (a) the library historical role, (b) prior research, (c) technological innovations, (d) the library's social mission, (e) the flow of information through society, (f) the economics of information, and (g) changing user's need.

Comments provided by some writers:

(a) Vagianos and Lesser: On the nature of emerging information policy: it will require equality of opportunity and preservation of free and open democratic society to provide equal (economically and socially) access to information.

(b) R.M. Hayes: On the relevance of existing curricula in changing librarianship: new approach will include wide range of other information-oriented curricula.

(c) B.P. Lynch: Vocational training is less valuable than one in intellectual foundation. The traditional curriculum was focused on techniques, the future of librarianship rests on principles common to all specializations in the field

(d) P. Molholt: Discussed need for a provision of access to content by organizing information by online tables of contents, indices and structures in addition to traditional identification and location of material only.

(e) Cox and Cox: referred to archivist view what to preserve.

(f) J. Durrance: theory on information needs till now was descriptive, lacking clear definitions and the technology-driven research lacking interest in the behavior of individual. The traditional focus was mission-oriented and document-centered.

(g) B. Nielsen: New user instruction will focus on designing installation as contrasted with the traditional role of question answer mediation between user and desired information.

In setting a research agenda a number of issues were identified. (1) The properties of information, its impact on society, its dissemination and access. (2) Context of research on libraries, and information access. (3) Focus on (a) basic and theoretical (fundamental truths), (b) applied and pragmatic (solution of operational needs), (c) society centered (determination of needs and roles), and (d) policy oriented (decisions about resource allocation and priorities). (4) Forms to be investigated: (a) analytical (structures of relations), conceptual (ideas), (b) empirical (acquisition and validation of data), (c) historical, (d) bibliographic, and (e) technological.

The following research programs were suggested: (1) In information retrieval: theoretical, mathematical, architecture, and technical. (2) In linguistics and artificial intelligence: analyzes of documents for their retrieval (memory models, bibliographic control). (3) In database organization and quantitative methods. (4) In economics of information, its implementation, policy issues and networking. (5) In psychology: memory, learning, user information behavior, reading. (6) In communication: social psychologyical aspects. (7) The overall critique of library research for lack of rigor, interdisciplinarity and for asking questions of little interest to other disciplines.

- V -

VAGIANOS, LOUIS. 1972:

"The plain fact about information science . . . is that its practitioners do not know what they are talking about and are unable to describe the products they are trying to produce." (p. 154-5)

"Let us adopt a posture similar to the practitioners of medicine as members of a learned society and not that of a group of scientists." (p.157) "Information scientists, librarians, information technologists, etc. are concerned with the design, installation, and operation of information systems." (ibid.) "Both fields are plagued with lunatic fringes of quacks . . . Both are confronted with cautious general practitioners who would avoid change. Both are service directed and both are changing rapidly." (ibid.) "We could still pick up and choose what we need from peripheral disciplines . . . we would be using scientific approaches and we would be developing and applying the latest techniques and the most recent machines to solve our specialized problems. " (Ibid.)

---- 1973a:

"The information utility calls upon us for change, both at the microscopic level of procedure and the macroscopic level of philosophy." (p.1879). "What librarianship must do is incorporate into its professional structure a pragmatic philosophy concerning the variety of the mix (people, information, and change) which is the essential medium of cultural transmission in the social brain." (Ibid.) "What becomes clear is the unique situation concerning culture transmission professionals, who are without effective political control in their operational systems." (Ibid.) "The philosophy of librarianship can no longer afford to be a philosophy of powerlessness." (Ibid.)

---- 1973b:

The author makes a distinction between synthetic first principles, considered ontological linguistic approximations, and analytic fundamental principles, "beyond which further principal reduction is not possible . . . only the latter can be known with any tautological certainty." (p.3610)

Fundamental principles at a given level of generality state that the whole is greater than the sum of its parts. This principle should apply to librarianship, its library staff, collection, organization and its users, each of which can upset the totality of the whole, qualitatively or quantitatively, as e.g., in case of poor library building.

To maintain the principle of the greater whole there is a need for a synergy between parts in library operations, and these parts must have a defined magnitude allowing for value comparisons between them and the whole.

"Librarianship seems to accept the Marxist credo that a change in quantity is a change in quality." (p. 3611) However, the poor definition of the numerical base makes the comparisons with other libraries untenable.

Therefore, "the power of a fundamental statement is measured by the number of different particularizations that can be generated from it." (Ibid.) For example, processing of information beyond the limit of human use is meaningless, and any library, even very harmoniously operating must find a proper balance between the library users and its operation.

VAKKARI, PERTTI, 1991:

"We need conceptual analysis of the discipline in order to outline its central articulations and basic concepts, as well as the relations between them. The way we articulate and demarcate the sphere of reality which is the object of our research will influence the choice of research strategies at a lower level. The outcomes are reflected in what are held as central areas of research, what problems are seen as significant and fruitful. They also influence the choice of theories, concepts and methods. Often the higher-level theoretical commitments are not the conscious solutions of an individual researcher. Thus a researcher does not deduce from these commitments certain conceptual-methodical solutions for a single study. Rather, the general conception of the discipline acts as a frame which constrains the researcher's solution." (p.3)

VAN DER LINDE, G., 1990:

In postmodern society the focus of liberal humanists on technological progress has been replaced by the notion of performativity, i.e., "the principle of maximizing output and minimizing input. As a result, knowledge has become a commodity which can be used to generate wealth." (p.249) This leads to the power struggle among academic disciplines for the marketability of their domain, by controlling the discourse within the discipline. "Instead of uncritically accommodating the performativity principle and viewing the academic library as a purely functional space, academic librarians should counteract the authoritarian deployment of power embedded in the idea of knowledge as commodity and capital." (Ibid.)

VAN NIEKERK, RONA V., 1985:

"All professions need a basic underlying philosophy that provides a statement of the purpose and direction of the discipline . . . some of the philosophies of librarianship that have been advanced and their common trends [are] synthesized into a possible foundation for a philosophy of librarianship." (p.178)

The author discusses marketing and management as components of a philosophy of librarianship. Needs are basic in human behavior; the library satisfies some of them by providing reading material and hence is involved in marketing information. They provide an intangible product (information) that follows marketing principles applicable to non-for-profit organizations.

Marketing, that expresses the needs of the patron, should be distinguished from selling; it is rewarded not by profit but by librarian's satisfaction.

Libraries are the stores of recorded information that reflect intellectual aspects of the community served. They communicate the content of their collections by transferring the message from the producer to the receiver, based on the understanding of the needs of individuals and their society.

"Marketing concept is compatible with current library philosophy [it] can be integrated into librarianship with confidence, as it is concordant with the principles of librarianship." (p.182)

VAVREK, BERNARD, F., 1968:

Reference service existed from its beginning without theoretical bases. The author's theory is summarized by the statement that all "activities which directly or indirectly affect the library must be considered as variables in the reference process." (p.500) And the reference service must be evaluated in the context of the total library. Referral process includes all library components, its books, librarians, patrons and physical library.

---- 1974:

Communication is a common denominator for all librarianship; it attaches more importance to the human elements in reference service than to the knowledge of information resources.

Hence, "the introductory reference courses either totally or extensively should be redesigned to explore the dynamics of interpersonal communication." (p.215) Search methodology should be offered as an advanced course.

The knowledge function in reference work is a means not the end of its service, its primary role is to facilitate the interpersonal communication between library patrons and reference librarians.

VELTMAN, K., 1991:

The author discusses the philosophical implications of new media, by pointing out to the limiting impact of the speech and printed book on knowledge and communication, and the computer role in utilizing the multimedia capabilities.

VESTHEIM, GEIR, 1992:

This essay has been written in response to the criticism of the ideology of democratic enlightenment movement in the Scandinavian countries by postmodernists, who claims "no certitude, coherence or preestablished meaning for human or social life." (p.13)

The premise developed in the essay is that the highly industrialized societies need more enlightenment, not more information. The definition of enlightenment needs is a subject of philosophical, political and ideological interpretation.

"Contrary to the idea or concept of information, which is closely connected with the interests of the producers, the idea of enlightenment is anchored in the interests of the individuals or citizens in a society." (p.16)

The point made is "that the accessible information is interesting only to the degree that it is relevant for the aims of people's lives. When people are striving to reach a deeper understanding of themselves and their society, they need information that can 'highlight' their life situation . . . an enlightenment perspective that can relate detailed information to a life totality. Within this logic an information search is only one among several alternative means of becoming enlightened, and of gaining insight and understanding." (Ibid.).

VICE, KATHERINE, 1988:

The concept of individual service is based on the realization that it is the individual patron, not the librarian, that initiates and defines library service in terms of his or her own information needs and interest.

The foundation of librarianship includes the principles of freedom of and access to information, knowledge sharing with library patrons and the commitment to client self-sufficiency.

"The orientation toward the client - toward use, access, and integration - however imperfectly realized, is not only a worthy aspiration but one of major importance in the increasingly fragmented world." (p.27)

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VICKERY, B.C., 1970:

Librarianship is a stream of a continuous mediation between books and readers. Librarians must be good bookmen, know their users and be skillful craftsmen in linking various aspects of transfer of messages between persons. The transfer is a form of human communication, reflecting interpersonal behavior, a part of social psychology.

Librarianship includes the science focusing on understanding problems, technology providing means for solving them and the art of interpersonal communication. Research in librarianship is threefold, linking the issues related to books, readers and systems, on theoretical and practical levels.

---- 1975:

The discipline of library and information services is defined on three levels, as: (a) the intermediaries between the source and users, distinguished from mass and personal communication, (b) centered on documents, which are produced, reproduced and transferred for use, and (c) responsible for document analysis, storage, retrieval and distribution.

The three levels are interrelated within the structure of the transfer process or system as a whole, its organization, administration, and management.

Research can be subdivided into three categories: (1) practical study of organizational forms for service, (2) technical study or specific issues, and (3) scientific research stressing concepts, hypotheses and theories.

Academic research is focused primarily on scientific research. "The more elementary modes of investigation - descriptive rather than analytical - may be regarded as necessary steps that may lead towards the development of information science. But that science will only be established if firmly based theory can be constructed." (p.159)

---- 1986:

Knowledge representation applicable to information science may be viewed as: (1) semantic structures of sentences, or (2) knowledge base for reasoning.

In information retrieval the structuring of subject statements can be made by (a) assigning specific roles to each component of a subject statement, describing its participation in the subject statement; (b) assigning each term within the subject fields to a semantic category ('facet'), and (c) interposing between each pairs of component the relations between them (such as concurrence, distinctness or equivalence).

Knowledge representation in information (and in the library) fields are the bases for classification, in which the whole collection is divided into fields, each field into facets, each facet structured into a hierarchy; all combined (coordinated) and coded. Standard terms are listed in thesauri either as given, or reduced to semantically more primitive units.

Knowledge representation in reasoning provides for the inference in the 'if-then' formats, and is used in question-answering systems.

Computer-based retrieval system (a) amplifies the formal query and transforms it into the search statement, (b) searches databases and (c) reformulates unsuccessful search statements.

VICKERY, BRIAN C., and ALINA VICKERY, 1987:

Based on Howard White and Belver Griffith 'map' the authors visually summarized the contributions of major authors to information science. The map is divided into five major areas listing authors cited in Key Papers in Information Science, and other well-known writers, for the period between 1971 and 1978. All contributors are arranged in five major categories: Precursors, scientific communication, bibliometrics, generalists and document analysis.

Library and information services are defined as intermediaries in human communication, focusing on documents and their transfer. (a) Information is an unusual economic good: it can be used by giver after it is given away, and it is universally relevant as a contributor to other activities. (b) Information science is defined as a study of the communication of information in society. (c) Information transfer contains all processes involved in transferring information from sources to users.

Information that is extracted from a message depends upon receivers' current knowledge It may only marginally relate to the intend of the sender either because it was not clearly expressed by the sender or was distorted by the channel.

Relationships between sender and receiver of information can be improved by use of feedback.

Principles of information system guide its design and management. These principles are the extension of Ranganathan's five laws by the addition of the following laws: (6) save the time of the user, (7) no information system is self-sufficient, (8) each information service is only one part of the community's communication system, (9) user should contribute funds in relation to benefits perceived, (10) system should be cost effective and (11) it should be adaptable to change.

Information systems are only one of the existing channels for obtaining information; other channels include (a) foundation knowledge (family, education), (b) continuing and current channels (mass media, meetings, publications), and (c) on-demand information.

Sociology of communication focuses on mass communication, while sociology of education discusses social roles of educational agencies. There is a need for similar approach in informative communication that would include analyzes of purposes and performance of social aspects of information transfer, their channels such as libraries and information services, the context of information provision and its economics.

---- 1992:

The book is intended as a 'core' textbook in information science. It focuses on information transfer in a social context, relationships between information and individuals and the nature of information systems. Its main theme is the notion of information science as a unique discipline.

VINCENT, GEORGE E., 1904:

The author discusses the meaning of the library as a social institution bases on relationships between an individual and society. "To the individual the present has no meaning, save as past experience enables him to interpret it. In a true sense personality is memory . . . social group maintains its integrity only under the unifying influence of a common tradition communicated from generation to generation." (p.578)

Memory (a) is interconnected with the whole body through brain cells that preserve it; (b) it is closely related to the individual; (c) it must be retentive, well organized and made permanent and systematic for quick availability; (d) it must be active; and (e) it must be selective in preserving facts and images.

The library "in its very nature and function . . . is a cooperative and unifying agency. It is one of the means by which the social memory is put at the service of society." (pp.579-80). It is an active and democratic institution, its specialization corresponds to the social, intellectual and physical division of labor, its methods "provided a key for all modernly administered book collections, which makes every detail quickly available." (p.582) It exercises censorship as a social duty to select books based on their accuracy, scholarship, and literary value, but tempered by liberal attitude in suggesting tasteful selection of material.

Social aspects of librarianship are demonstrated in its service to individuals and in the distribution of knowledge and ideals, elaborated by social processes, thus helping to administer the social memory.

VINKEN, PIERRE, 1982:

Definition of information changes with the context in which it is defined. It is a message, data, knowledge, signal, representation, symbol or pattern that can be communicated.

In terms of economics, information activities are divided into (a) information producing activities, equipment and service, and (b) generation of information needed by the users. "In short, information is the end-product in the producing sector and merely a means in the user sector." (p.332)

The non-economic schools of thought maintain that information is not scare, it does not disappear or deteriorate, and its use increases its value by generating new information.

Economic view is based on the principle that any needed resource has a scarcity value, which in turn determines the economic value that depends on its relevance. The collection has a useful value only when it is structured. It is constantly changed or consumed, creating the scarcity of structured information ready for immediate use, it becomes obsolete with time by being less relevant.

"Information generates knowledge and knowledge generates information at a higher level. As a result, the previous information is superseded by new information of greater depth. The added value has created an improved product." (p.134)

Thus: (a) information is an economic commodity subject to the laws of supply and demand; (b) information and culture are interrelated; (c) the impact of information is greater on the developing countries, and (d) free market economy is based on competition that should not be limited by unnecessary regulations.

VLEESCHAUWER, H.J., 1960:

The author argues that terms such as 'librarianship' and 'philosophy of librarianship' are inexact and inappropriate, and should be substituted by terms such as 'library theory', 'library thoughts' and 'library science'. No single, all-inclusive definition of librarianship is possible because of its diversification and heterogeneous roles played in the society. The library is an instrument for the transmission of knowledge and ideas of the past to future generations.

The task of philosophy is to give a rational account of reasons for certain occurrences. Ethics offers not an explanation of things but the explanation of the meaning of their existence in any particular situation.

The deontology is based on some concrete phenomena pertinent to a given profession, its goals, and duties. In general, library deontology requires that a librarian have a spirit of idealism, be loyal to his profession, the aim of which is to serve the civilization and to study the history of the institution in which he works. Among the characteristics of a good librarian are: the sense of continuity, an alert, inquiring mind, respect for freedom of thoughts, good knowledge of human psychology, always treating the human beings as ends in themselves, and foremost, the objective of the library is not homogeneity but the individuality of all readers.

---- 1964-65:

Vleeshauwer discusses libraries in a historical context, relating them to the ideologies of the society in which they were created. His approach is evolutionary, based on the understanding of the historical origins (i.e., 'phenomenology') of the social institutions.

The modern public library, as a part of cultural policy aiming at general cultural uplift, is subject to state authority and its financial support. It differs from libraries in the past by its public character.

The concept of a public library, as a departure from the scholarly library emerged in the eighteen century as the result of liberal emancipation movement. Its focus changed from primarily preservation function to one of access, stressing utility and circulation.

"Every library [collection] . . . was founded to be 'read' and every library was used to that end. Means are devised to meet needs and not vice versa. It was only in the twentieth century that economics inverted the process, . . . but utilization, like freedom, is subject to a number of restrictions . . . the [historic] library always permitted usage to the extent that was justified and required by the current level of civilization ." (p.58) "The contemporary library is set on utilization to a far greater extent and in a far more pronounced fashion; and this means that it has a far stronger feeling for the social and civilizing function which all modern types of libraries within their own spheres recognize as their raison d'ètre." (Ibid.)

VOLOSHIN, METRO, 1988:

Economic forces are catalysts for technological innovations; as the steam engine germinated Industrial Revolution, the computer stimulated technical revolution.

The symbiotic relationships between information and technical means of collecting, manipulating, preserving and dispersing it, act as cross stimulation for each other, fostering self-generating growth.

The negative aspects include commercialization of information, issues of ownership and copyright; "the greater the flow of information in a society, the more valuable and profitable it becomes, therefore the more restrictions put on its movement." (p.12)

The technology erodes the already disintegrated fabric of human society, magnifying alienation. Marx introduced the concept of alienation as a gradual transformation of humans into thing-like beings in a capitalistic society, widening the gap between rich and poor, controllers and controlled, oppressors and oppressed. Technology does not flourish in a vacuum, but reflects and manifests both positive and negative aspects of society.

VON FOERSTER, HEINZ, 1982:

When the professional common bond erodes, specialization in the discipline increases, creating social dysfunction, and a corruption of the concept of knowledge, which, in turn, affects library functions.

The perversion of the concept of knowledge and the misconception of the social role of librarianship were created by confusing symbols with objects. "It is the confusion that presents the library as a repository of knowledge and information. However, a library cannot store knowledge and information - only documents, books, maps, microfiche, slides, etc. When people use these materials they will become knowledgeable and informed. By obfuscating this distinction, knowledge and information can be made to appear as if they were commodities, to wit, the emerging 'knowledge industry'" (p.279) "With this the problem of how to know and how to let know are successfully pushed into a cognitive blind spot. We don't even see that we don't see." (Ibid.)

- W -

WAGERS, ROBERT, 1978:

"Three facets of American reference theory in the twentieth century are especially important for conceptual approaches to effective reference service. First, basic assumption of maximum client-centered service was formulated prior to 1930. Early theories were acutely aware of the necessity to meet users' needs and purposes as fully as possible. Second, theories after 1930 misinterpreted the contribution of their forebears with the effect of suggesting that maximum service be a new, bold step in reference theory. The basis for new thinking was the 'information dogma' - a collection of assumptions related to the amount of 'specific information' provided to the users. Third, this dogma caused later theorists to deduce principles of service from these assumptions without sufficient attention to empirical findings. The result has been a climate of opinion in which inquiry into the concrete relationships among elements of reference service has been forestalled by doctrinal adherence.(pp.278-279)

Integrated reference theories must wait upon objective investigations into the forces responsible for successful practice of the reference function in libraries and information centers." (p.279)

WAGMAN, FREDERICK H., 1964:

The author reviews some arguments against freedom to read.

(1) 'Arguments for censorship' of obscenity (a) identify obscenity with immorality; this is a reductio ad absurdum, and (b) claim that there is a causal relationship between bad books and delinquency; this is a post hoc ergo propter hoc reasoning, lacking evidence to support the hypothesis.

(2) 'The cause of would be censor' is stated by liberals who limit the censorship of undesirable books to the young children, by eliminating the material from schools. Libraries should reflect the views of their communities. Wagman is concerned that attacks on obscenity as a nuisance lead to censorship of any ideas objectionable to any segment of society.

(3) 'Censorship, the scapegoat' strategy is to identify one objectionable cause and challenge the critics of this approach as subversive. However, the library is responsible to present all views, good and bad; democracy rests on the right of anyone to his or her convictions.

(4) Segregation by denying to different races access to libraries is racism that fails to see the library role in helping the minorities in their self-development.

(5) The scarcity of resources to buy library material is by itself economic censorship. "It is merely ironic to speak of the freedom to read in areas where there simply isn't anything to read." (p.479)

A recent revolution has completely changed the role and importance of libraries in society. "The increase in knowledge, the demand for intensified education for an ever larger part of our population, the inadequacy of the textbook as an instructional vehicle . . . and the heightened sense of the interrelationship of the many disciplines of knowledge - all given the book new value as an informational resource and have made the library not a substitute for, but an important part of, the entire educational system." (p.479)

"The responsibility of the library to our society is greater than that of almost any other social agency, for it makes available, in their full presentation, new ideas . . . they serve as the yeast in the ferment of change, aid our effort to understand what is happening to us, and help us as we try to determine the course we shall pursue." (p.477)

WALL, THOMAS B. (1992):

In discussing the epistemic relationships within library and information science, the author distinguishes between 'techne' and 'phronesis.' The techne are the principles or relational methods developing means for accomplishing the desired ends. The phronesis represents the disinterested understanding in determining the desired ends and means for attaining them. It is a distinction between information science's technical wisdom (techne) of doing or making something, and library science's practical wisdom (phonesis) based on the fundamentals such as freedom of and access to information required by the information needs of the pluralistic society and its individual members. The relationships between information and library sciences are between related, but distinct professions. They are summarized in the author's taxonomy of modes of thinking illustrating the different focus between library and information sciences: in theory (social vs. technological), in practice (service vs. productivity), in motives (egalitarian vs. profit), in application (services vs. efficiency) and in scope (libraries vs. anywhere).

WALLACE, SARAH L., 1960:

"Machines and methods should be adopted only insofar as they further the Library's primary aim, the brining together of books and people." (p.23). "A librarian should be the bridge between reader and book." (Ibid.)

"Books are ideas. Ideas have changed our world."(p.70) "Let us have respect for the power of the ideas, which we handle daily . . . we are engaged in a battle of words, a battle of truth." (p.71)

WALTON, CLARENCE C., 1956:

The author makes a number of assumptions about the library and librarians missions. (1) Librarianship as a service profession must be responsive to patrons' needs. (2) Library public transformed the librarians' role from passive custodianship of books to the dynamic sharer of knowledge. (3) Librarians are responsible for putting knowledge to effective use. In the past, most of the library patrons were elite demanding quality over quantity of service. Today the patrons include larger segments of population with popular taste.

Nowadays, research focuses on team work, replacing invention by research method of expanding knowledge, requiring librarians services as a generalist, balancing the needs of different specialists. "The issues transcend boundaries and affect all librarians, all researchers, all managers, all engineers because it touches one's philosophy toward truth, its meaning, its acquisition, its purpose." (pp.122-23)

"One of the essential functions of managers is to . . . [understand that] librarians' zeal for truth must serve as an effective counterweight to the manager's enthusiasm to get things done. Freedom without truth is an illusion and truth without freedom becomes a cruel prison. Contemporary society's wants may not be its needs." (p.125)

WAPLES, DOUGLAS, 1931:

"I strongly approve a revival of the 'bibliothecal spirit' and belief it can be more promptly revived if we can find out more precisely what it is." (p.743)

"Bibliography and 'bibliothecal spirit' at best tell little more than what books there are and what the books are about. To tell what the books are worth one must know for what purpose the books have been or might be used . . . There is thus opened to the librarian an opportunity to extend his professional horizon by acquiring an acquaintance with readers comparable in system and adequacy to his present knowledge of books. As the bibliographer looks to the specialist in the given field of literature for sources and for methods of investigation, so the librarian concerned with a definition of reader's needs should look to the social scientist for equivalent sources and methods." (pp.745-6)

The author makes the following points: (1) the library profession has an obligation to society to acquire knowledge that justifies public confidence. (2) Librarians are able to satisfy needs of individual patrons. (3) The increased publications make the selection more difficult. (4) Library research of readers needs may simplify the problems of book selection. (5) It may contribute to the theory, even if its practical applications are not yet apparent.

"There is a need for both specialist and general practitioner. Of the two, the general practitioner is the less dispensable [but] there is a place for both types of schools that . . . will eventually bear directly upon vital problems of library administration." (p.746)

WARD, DAVID V. 1990:

The discussions of relationships between intellectual freedom and censorship suggest misunderstanding of the underlying principles, formulated by two basically ethical theories: consequential and deontological.

Consequential theories are represented by the utilitarianism, holding that right action is determined by its outcome in producing good consequences: the best action is the one that produces the greatest amount of good, for the greatest number of people. This theory is based on the risk-benefit analysis. Its best known proponent is J.S.Mill.

Deontological theories maintain that the right action is determined by factors other than its consequences, such as the intends, justice, and duties. Its representatives include Kant (the first deontologist) and W.D. Ross.

The objection to consequential principles is the notion that right action or decision is more important than its utility. The major criticism of deontological approach maintains that not all that is right is also most desirable.

Censorship is undesirable because of its consequences, (a consequential argument); or because people have rights to express their thoughts, independently of the consequences (an deonotological argument based on the principle of intellectual freedom).

The librarian's role here is to articulate the consequential reasons for not censoring the undesirable books, but he or she must also "acknowledge the public's rights to be selective about what it wants in libraries it pays for." (p.90). The argument based on intellectual freedom is stronger than the one based on long lasting consequences of censorship. However, in cases where there is no issue of intellectual rights, J.S.Mill's defense of freedom of expression formulated in terms of destructive consequences in denying it, is equally persuasive. Censorship, he states, denies in advance the possibility of truth of censored opinion, by usurping the authority to decide for others what is right or good, on the assumption of censors' own infallibility.

WASSERMAN, PAUL. 1969:

There is always a tension between theorists and practitioners. "Many would argue that without theory or philosophy, practice is ultimately ritualistic and bankrupt. But in librarianship the lead/lag relationship, whether in conceptual or even practical ideology, still tends too often to be reversed, with practice in the vanguard and education." (p.1282)

"The function of a professional school is not . . . to impart a narrowly defined set of skills of the kind measured by examination, but to define a set of criteria which individuals entering the profession ought to meet and to screen out those who do not measure up against such a yardstick." (p.1283)

In the fast changing environment, library and library education must change. The process is difficult to implement because of anxiety and insecurity.

"Doing the work which the culture requires of us must be our overriding concern. It is toward such a goal that our change must be oriented." (p.1288)

---- 1972:

Wasserman argues for a change in the focus of librarianship from mere custodial function to a more specific and viable ends. The lofty ideal of collection development must be challenged as not sufficient.

The argument is developed in the historical context, and is based on the belief that librarianship is an organized creed that functions within the context of an institutional hierarchy.

The call for a change is to reinforce the importance of the information service role of librarianship. The opposition to changes comes from the 'wait and see' philosophy. Yet, both philosophy and values relate to ethical choices, which in turn require initiative and leadership.

There is a need for leadership focusing not only on the traditional roles of librarianship but also to develop a more effective client system of library services.

WATSON, L.E., and others, 1973:

"The growth of social sciences has necessitated the development of formal systems of information storage, retrieval and dissemination over and above any informal and personal contact between individuals. The contributions of information scientists . . . raise certain questions about the epistemology of the social sciences. The writers examine these and some of the major problems related to the communication of information in sociology. They postulate a model derived from recent thinking in the sociology of knowledge, based on the notion that the construction and validation of knowledge is itself a social process." (p.270)

The essay postulates basic propositions concerning retrieval systems. (1) Knowledge is not independent of the knower, but is based on the social context within which it is generated and used. (2) Perspectives are developed in terms of shared understanding, often not available to an external observer. (3) "An adequate indexing system should provide an opportunity for the user, through interaction with the system, to construct his own perspectives . . . this position is very different from the matching process assumed by the majority of the existing systems in which a user's orientation and the system orientation are seen as being explicit, explicable and compatible." (p.281) "The really effective retrieval system depends on an active and ongoing partnership between information scientists and subject experts." (Ibid.)

WEBB, TERRY D., 1987:

Reorganization of libraries is based on either the responsive or demonstrative philosophy. This duality of approach illustrates diversity among libraries and a divergence in innovative and traditional interpretation of the discipline. Each of the approaches becomes an intuitive aspect of the manager's personal philosophy of librarianship, rather than the attitude based on selecting specific approach in terms of library mission, public served, orientation of the parent institution and available funds.

The distinction is illustrated by library managers response to automation. In innovative approach a separate department is organized with full responsibility for its operations and increasing complexity of library structure. In the demonstrative approach responsibility for automation is assigned to an existing department, creating problems of organizational autonomy and budgetary support.

The issue "concerns the professional philosophy and ethics of librarianship. A library . . . is an articulation of the philosophy of librarianship, a philosophy based on a commitment to service and free access to information for all. Each library articulates that philosophy differently, and the articulation changes over the time based on the needs of the users, the conditions of the institution and the talents and personalities of those involved. Accompanying this philosophy is the simple assumption that . . . librarians can best be relied on to provide library service." (p.54)

This assumption is challenged. "Herein lies the source of the divergence between the responsive and demonstrative approaches to library reorganization and the accompanying split in the underlying professional orientations toward innovativeness and traditionalism. Libraries are no longer fully convinced that they know what is best for their public."(Ibid.)

The responsive approach is the catalysts for change, the demonstrative approach preserves the status quo.

WEGNER, PETER, 1983:

Mature science is based on a paradigm that prescribes acceptable research. Coexistence of multiple paradigms indicates a pre-scientific stage of a discipline such as information science. In this stage there is a close relationship between ideologies and paradigms. A distinction is made between knowledge-oriented activities (mathematics), action-oriented activities (farming) and activities transforming knowledge into action (education, engineering). Informatics was initially action-oriented (practical) and is now in the second stage of fusing action-oriented and knowledge-oriented activities.

The ideology of a discipline determines its paradigms and criteria for evaluating its quality and relevance. Its methodology is the principles that underline tools and techniques used in accomplishing its goals. Its sociology includes social interactions among practitioners and the social impact of its concepts and products on society.

Computer science is the study of phenomena related to computers. It was interpreted as (a) action oriented, empirical view held in 1950s, (b) algorithms, and information structures, knowledge oriented, mathematical view of 1960 and 70s, and (c) the management of complexities view of engineering of mid 70's.

Software engineering is a fusion of action and knowledge oriented activities, motivated by economics of cost. The industrial revolution of 1750-1950 harnessed energy to serve man by developing machines to replace manual labor; the information revolution of 1950's harnesses information to serve man by developing machines that replace mental labor.

Knowledge engineering is defined as the application of systematic techniques to the management and use of knowledge. Artificial intelligence deals with problems requiring knowledge of experts to solve them, it amplifies human knowledge rather than substituting for human intelligence.

Computer knowledge is precise and detailed. Human knowledge is concerned with organization for people who have contextual understanding and ability to conceptualize at the level above the computer.

"Information science has a special, intimate relation to knowledge, both because subdisciplines like artificial intelligence are concerned with the mechanistic modeling of knowledge and because knowledge engineering provides a tool for managing knowledge that offers our only hope for controlling the knowledge explosion. Moreover, computers provide a new dimension for communication among community of scholars that could fundamentally change the sociology of creating and using knowledge in all academic disciplines." (p.175)

WEI, ANTHONY, 1979:

Lack of a philosophical or theoretical framework prevents clarification of library relations with other disciplines. As a result, library science is only library service, and librarians positions are not clearly defined. This is true especially in academic field.

WEINBERG, ALVIN M., 1964:

"Science, in response to the information crisis, is undergoing a hierarchical social reorganization, and . . . this social organization will impose a corresponding hierarchical organization on our scientific information system. The central element in this organization [is] the information center and one of its chief customers, the theoretical scientist." (p.463)

"The specialized information center [is] not a technical library: it is more nearly a technical institute since in its ideal form it creates new science." (p.467)

The center depends on librarians retrieval, storing, and cataloging library materials and on their assistance in directing the user to the existing compilations rather than to the primary literature.

Both the center and the scientist use the inductive method: they collect and correlate many disparate facts and identify regularity in the seeming diversity.

In "the successful inductions all share the same pattern: the data is amassed: it is systematized; someone worries very hard and very long about it and, with luck, discovers regularities." (p.466)

WEINGAND, D.E., 1984:

This collection of essays discusses some philosophical issues relevant to librarianship.

(1) There is a shift in marketing philosophy from 'selling' to 'satisfying' the client and from 'profit' to 'exchange'.

Marketing is defined as analysis, planning, implementation, evaluation, evolution and control of programs designed to bring voluntary exchanges of values with target markets (library patrons) for the purpose of achieving organizational (library) objectives. The library must define its mission and goals.

analyze the market (its segmentation) of users and nonusers in terms of their needs. [Ann J. Mathews]

(2) Marketing with strategic planning provides a practical and philosophical foundations for library and information services.

The shift in library philosophy is in the planning and structuring resources and services for changing community environment. This approach replaces professional intuition, by focusing on the utility, behavioral and psychological impact, and end-use variables of the patrons needs. [ M.Keith Ewing]

(3) Behavioral learning theory calls for a change in the library concept of a customer. Distinction is made between external and self-motivating motivation (existing prior to, or as a result of promotion).

Library users are self-motivated, perceiving value of books prior to the promotional program, the nonusers are not self-motivated. [Judith B. Ross]

WEINTRAUB, KARL J., 1961:

"The librarian's overwhelming quantitative problems will demand his attention and tax his ingenuity. But . . . massive complications in bibliographic control, information retrieval, cataloging, housing, and circulating books interfere with vital tasks . . . of becoming quality-minded guardians of man's accumulated productivity." (p.12)

"Scholars are the first to object if the librarian arrogates to himself the right of access to man's written world, and in a free and democratic society there is a very substantial problem involved in such a conception of the library task." (Ibid.)

The objections will be minimized if the librarians make the utmost effort to provide their users with the reading material of highest quality based on the level of judgment similar to that of other intellectual or artistic professions. Ortega envisaged the librarian as a filter between the massive publication of various qualities and their readers.

WEISKEL, TIMOTHY C., 1986:

"Process, perhaps even more than form, constitutes the defining characteristics of life-system." (p.545) "The commonsense contrasts between structure and function, morphology and physiology, form and process are not ultimately defensible when life-systems are viewed over time. At any moment it may be true that form, morphology, and structure all contain process, physiology, and function, but in the long run the former attributes express the latter. Form is the residue of process." (Ibid.)

The library is a processual object; it contains consultable documents, which when read are subject to the communication processes. What one obtains from the book is information.

Information is a non-random arrangement of matter and energy, a negative entropy, thus not itself a matter or energy but their differential states; information is not a 'thing' but a relation between things.

New technology in generating, storing and transmitting information radically changes the flow of information and the intellectual life-forms served by libraries. Dealing with these changes in terms of 'things' results in focusing on cost/efficiency rations or tradeoffs, disregarding patrons intellectual needs.

"Library's essential task is to arrange the objects to favour the metabolic processes of thoughts. To feed the life of the mind the scholar devours this ordered information, reformulating it and arranging it again in yet another objects which the library must in turn arrange anew, making them available to nourish the life of yet other minds. Since in all of this the life functions of the scholar and the library are reciprocal, their coevolutionary fates are one." (p.562)

WELLARD, JAMES, HOWARD, 1934:

"A solution to the apparent incompatibility of the two points of view - the scientific approach and the practical method based on expediency and assumption - may be found in the synthesis which ought in the nature of thing to follow the analysis . . . in the interpretation of the raw data and the application of the resultant theory to practice. And this is what is meant by the deductive or philosophical approach - an approach which neither distrusts facts nor is blinded by them, but which seeks to fit them into the changing library order." (p.207)

---- 1937:

The author proposes a social theory of book selection based on the library as a social force with social functions and obligations, and on historical review of objectives of education and recreation.

The hypothesis of this dissertation is that the growth of the public library was influenced not from below by the majority of common men, but from above by wealthy minority, hence not reflecting social forces. Shera disagreed: philanthropy didn't create need for public libraries, but responded to the already existing demand for them.

---- 1940:

The objectives of librarianship are to support democracy and to improve the society by raising level of intelligence and knowledge of its clients.

"In contradistinction to all other popular print-distributing agencies, the public library is social and educational in purpose: not, however, in the formal manner of school or university extension work.

It is not concerned solely with the diffusion of knowledge, but with the intellectual improvement of those groups which most need it and have the least opportunity of getting it. The recognition of this principle is what we mean by the philosophy of librarianship; and the practice of it constitutes the sociology of the profession.

The political position of the library, its social relationships, its place in the general field of knowledge, technical and professional considerations, can all be brought together for the fulfillment of this objective, which springs from the human values implicit in the democratic creed." (p.160)

WELLISH, HANS, 1972:

"The evolution of the name Information Science (IS) is traced from the beginnings of 'Library Economy' up to the emergence of 'Informatics.' The terminology of 39 definitions of IS is compared in order to find the common concepts of this science and its central topic of investigation. The comparison shows that no consensus exists among the practitioners of IS about what it is or should do. The concept 'information' has also been variously defined for the purposes of IS, but no generally acceptable definition has been formulated so far.

The discipline called IS had not yet attained the status of a true science, lacking an agreed-upon central topic of investigation and an unambiguous terminology (as well as other attributes of a science). The name Informatics, which is already in wide use in other countries, should possibly be adopted for the discipline that might yet evolve into a true science." (p.157)

---- 1979:

Bibliographic control is defined as "a mastery over written and published records which is provided by and for the purposes of bibliography." (p.41)

Wilson made the distinction between (a) descriptive control of formal and physical characteristics and (b) exploitative control, a mastery over its subject content. Its purpose is to provide basic bibliographic data on all publications issued in all countries.

Cybernetics concept of control and communication in the animals and in the machine, relates to the control of bibliographic processes which obey fundamental laws of cybernetics, the Law of Requisite Variety (only variety can destroy variety).

The issue of relevance judgment by the user and indexer relates to two different notions of relevance: (1) relevance as 'being of the same topic', and (2) retrieved document starts in the mind of a user a new train of thoughts, in which an original document was relevant as a stimulus.

Authors conclusion is that only the descriptive, transcriptive and ordering functions of the bibliographic control system can be fully controlled; the content-oriented retrieval function, based on a subjective judgment of relevance by indexer and the user are not completely controllable.

WENGER, KATHLEEN, 1982:

The author asks librarians to demonstrate human and social concerns above that required of a system operator. System approach to library management ignores service aspect, yet service is the librarian's raison d'être, and any collection, if not used, is irrelevant.

Selection is a human operation based on anticipated needs and implicit standards of literary acceptability, durability or attractiveness. Instead of devising rules with people in mind and then impose them on a machine, it's better to have a compromise in a planning stage by providing widest possible access, with librarian bridging machine-human communication gap.

WENGERT, ROBERT, 1991:

The author identifies two basically opposed approaches to ethical discussions: (a) Absolutism maintains that things that are right are always so, independently of circumstances, and (b) Relativism claims that what is right or wrong depends entirely on how one feels about the issue. What in a given situation is right for one person may be wrong for another.

There are also two styles of reasoning in ethics: (a) Result oriented, consequential, teleological theories evaluate the action in terms of its consequences; e.g., Utilitarianism maintains that one should do whatever will bring the greatest welfare to all concerned, and (b) the nonsequential, deonotological theories insist that certain things ought (or ought not) be done regardless of the consequences; e.g., Contractualism states that "an act is wrong if it violates those constraints which any rational person, considering the matter in a way which favours no one's particular interest, would agree " to be wrong. (pp.115-18)

WERSIG, GERNOT and ULRICH NEVELING, 1975:

Information science did not develop out of other disciplines, but out of a practical need of documentation, or 'information retrieval', with contributions from many other disciplines.

The authors identify six different meanings of information and believe that information science must be defined in relations to information needs of people involved in social activities as either reduction of uncertainty caused by communication data, or as data used for reducing it.

WERSIG G., and G. WINDEL. 1985:

"Information science is in severe danger of fading away before it has started to flourish . . . Neither methodological principles nor construction of systems or services are serious enough to distinguish information science from either library education or computer science." (p. 22)

"People are not searching for information because they are 'information men' or because there is an in-built mechanism for information searching or because they are fully rationalized but they are acting in their environment because there are discrepancies to be dealt with . . . knowledge very often could be replaced by some other source of actions like values, aesthetics, feeling. (Ibid.)

The term " information action' is more comprehensive, more realistic, and more powerful model than 'information man'." (Ibid.)

WHITE, DAVID A., 1978:

The author criticizing Wright's The Oral Antecedents of Greek Librarianship (1977) for its methodology and doctrinal substance. He faults Wright for using secondary sources only, never citing Greek philosophers directly. This results in relying on specific interpretation of their philosophies by others. Furthermore, White questions Wright's choice of authorities and his misrepresentation of the Platonic notion of form: Platonic two worlds (absolute reality: the forms, and continually changing derivative reality) display different degrees of reality. They relate to each other through participation; how can constantly changing things 'participate' in a world of unchanged forms? Plato's own answer to this question is still a matter of considerable controversy among philosophers.

To Wright, 'to inform someone' means to 'create form in' that person. But Plato's forms are never created, they simply are. How "is it possible to 'create' form in someone when that someone is in the process of being 'informed'?

"In the Platonic scheme of things, information can be properly called knowledge only on condition that the content of the information is directly related to the apprehension of the reality of the world of forms." (p.377)

Plato would probably not approve some of the cardinal principles of librarianship. For example, he believed that some people should not read some kinds of writings, because they are not ready for them. According to Socrates books are at best "a means of reminding those who know the truth." All writing, according to Plato, should reproduce the truth, while librarians believe that different writings address different truths.

White recommends some skepticism about "absolute truth," since it implies censorship.

---- 1980:

White stresses the importance of understanding the extends to which changes impact on library operations, by distinguishing between factual and value statements. 'Value' is not a simple expression of personal preference or taste but a realm of possibility.

The central point of this paper is the notion that the theoretical reasons in library literature are philosophically inadequate. "A complete analysis of the various aspects in the theory of librarianship will require more extended speculative inquiry." (p.302)

WHITE, D.A. and T.D. WILSON, 1984:

The authors discuss the Domain Theory developed by Kouzes and Mico. "The domain is defined as a' sphere of influence or control claimed by a social entity." (p. 180). The theory consists of three distinct domains: policy, management, and service.

"Policy domain refers to the organizational level at which governing policies are formulated . . . [it] involves mediation with the community at large." (p.181) The model represents participative management, based on the consent of the governed and equity value.

The management domain "is concerned with the control of the organization's functions. It has dual function - mediation between the organization and the external situation and 'administration' of the organizations internal affairs."(Ibid.) Its function is to facilitate technical and service aspects of the operations. This bureaucratic model is based on hierarchical control, stressing cost efficiency, effectiveness and coordination.

Service Domain is client-oriented and has "two distinctive characteristics: self-autonomy and client-orientation."(Ibid.) Quality of care and professional standards are the criteria used to measure the success of this domain. This is a collegial model, aiming at quality of service and problem-solving.

The Domain model is recommended "as a basis for examining library organizations, although it cannot provide proof of its 'truth'" (p.184) It is based on direct observations of managing styles in different environments. "'Grounded theory' generated from experience and observation in organizations may have more to offer a field characterized by its 'pre-theoretical' nature than 'derived theory' where ideas are extracted from previous work without adequate exploration of their applicability." (Ibid.)

WHITE, HERBERT S., 1978:

Since library service is not costless, deprivation of information because of inability to pay is unacceptable. The argument that the library is self-evident is not good enough. The advocacy of patrons self-service by using the library resources themselves diminished the quality of information service, and the past library emphases on the priority of collection development versus service is now hurting the library since service is more important in resource sharing environment, than a unique collection.

"We must stop thinking of the library as an end in itself, and think of what the library is supposed to be doing." (p.337)

---- 1983:

Over quarter of a million of people are professionals working in libraries and information science. Tendencies to provide definitions for minimal competencies in the field are dangerous. The key is to distinguish between training and education. In most cases nonprofessional activities of librarians are caused by shortage of clerical positions, resulting in clerical duties taking precedence over professional duties. This is 'retrofitting: fitting facts to conclusions already reached. In most fields education precedes training, with training occurring on the job, and through seminars or workshops.

One of the reasons of disagreement between library educators and practitioners is a different concept of value: practitioners do not want candidates to be educated, but trained, and educators follow that preference, because otherwise their students would not find jobs in libraries.

"In a free and uncontrolled environment, the ill-prepared and less competent will always drive out the competent: the less competent are more plentiful and cheaper [There is a] need to develop basic competencies and differentiate as to whether they should be acquired by education or training." (p.524) Furthermore,"seven years of experience is not the same thing as one year of experience repeated seven times. (p. 525)

---- 1985:

White differentiates between (a) participative management, allocating the decision-making and responsibility for it to committees, and (b) consultative management, as an input to the management decisions.

Participative style is at best a delegative process, at worst an abdication of responsibilities. The consultative style requires explanation for the decision made, particularly if it contradicts solicited advice.

"What the Japanese worker has and cherishes is some control (often through a group process which is participatory) over how he works to accomplish what management has told him to accomplish. (p. 63)

Libraries "embrace or allow themselves to be coerced into accepting objectives for which there are no resources, no plan, and no hope of success." (Ibid.) "What we owe our subordinates is a chance to work as they feel comfortable working as long as the outcomes . . . are acceptable, and an opportunity to individualize their jobs for both accomplishment and the feeling of accomplishment" is present. (Ibid.)

---- 1986:

By pleading poverty librarians run the risk of annoying their supporters. They are unable to generate political power among friends who will fight and take risks on library's behalf.

One strategic error is that librarians ask for too little. "Libraries must find a more pluralistic role. It must broaden its constituency. It must find a way to make itself and its activities indispensable to the work and life habits of a wider constituency, particularly of those who make the decisions which control our resources." (p.50)

"We must create a perceived imbalance in the public mind between what we do and what we should do. We must generate a demand for services we cannot now provide. We must then direct the glamorizers for most of this service to those who have power." (p.51)

All libraries "operate in the political arena, because politics is the process of making decisions, of allocating resources that are always insufficient to meet the expressed demands." (Ibid.) Librarians like managers will get credit only for innovation and marketing, "because successful continuation of the status-is assumed, and earns no credit." (Ibid.)

---- 1990:

Ethics requires self-discipline, librarianship required it even more so because the field is to a large degree unaccountable. Might doesn't make or justify right, but right (particularly our own truth) doesn't justify might.

Truth is an opinion formed beforehand, a verified, indisputable fact; principle is a fundamental law or truth, bias is a particular tendency that prevents unprejudiced consideration.

Professionalism can't claim altruism, only selfish gains. Professionals accept the discipline of behaving evenhandedly. Librarians are not neutral, many of them just suppress their feelings as an act of discipline while at work. Thus librarians, as professionals, should not take a stand on social issues that are not directly related to librarianship.

---- 1990a:

This is a critique of current librarianship for lacking mission and satisfying users' wants rather than needs. Library changes its meaning, by shifting from libraries without librarians to librarians without libraries. Because librarians cannot or will not define their mission, public libraries fluctuate with society's whims, academic libraries serve as warehouses, and school libraries exist in never-never land. Public thinks of libraries not librarians; the term 'library' changes its meaning with changing social values and pressures.

We are still emphasizing 'what the library does' (we have goals but no objectives), trying to do everything, focusing on people who 'need' us more rather than on those who have alternatives in getting information outside the library. We talk about information as a fuzzy quality, while others see it as a profitable commodity, a return on investment. Management is the most important course in library education: it teaches how to get and administer needed resources.

WHITEHEAD, JAMES MADISON, 1980:

This dissertation is concerned with the development of a philosophy and methodology for library and information science.

The author criticizes library and information science for (a) a lack of universally accepted philosophy of librarianship, and philosophical building blocks and (b) for its methodology. His own methodology is derived from the oral history technique, (similar to Delphi technique, but with added feedback) called by him a humanistic method. It is illustrated by mythological dialogues with some library leaders aiming not for a consensus but for clarification of their concept of libraries' sine qua non. It resembles Socratic dialogue's inductive method.

'Bibematics' is the study of monads, how information can be combined or transformed, leading to new discovery. Since knowledge is subject to constant change, it is considered an error, to be corrected by future discoveries. The meaning of experience is reason and the meaning of reason is experience. His philosophical logos of librarianship distinguish between two kinds of philosophies empirical to rational, and rational to empirical.

What philosophy is can be found only by doing philosophy. Historical background consists of Greek dualism (mind and matter versus idealism and materialism), Platonic dialectics (question and answer method), and Hegel's dialectics (thesis, antithesis, resolution).

An idea develops into a philosophy by means of common notions. Form and substance interact, producing laws. Functions such as cataloging or reference are forms operating on the substance of library and information science, while functional divisions produce functional organization of the library into departments. In the dichotomy between empiricism and rationalism the author focuses on relative pragmaticism (a rational equivalent of logical positivism).

Philosophy of library and information science cannot be defined. It can only be done. Whitehead divides philosophy of librarianship into three periods.

(1) Early period (till 1933) is subdivided into three subperiods: Colonial (up to 1850) student-librarian focus on intellectual self-improvement, and Librarian-teacher (1850-1933) and public library movement.

(2) Classical period (1933-1940) includes Butler's sociological school of thought that considers the librarian as a scientist, sociologist, psychologist, and historian. Butler's humanism focuses on the service based on the notion that thought precede service.

(3) The modern period (1940-to date) is divided into five sections: (a) 1940-45: it is represented by political scientists and poet, McLeish's defence of democracy. (b) 1945-50: the focus is on linguistic methodology in philosophy of classification (Daily). (c) 1950-60 is a period of applied mathematical approach of Shannon and Weaver, stressing irrelevance of meaning and information theory. (d) 1960-70: period is dominated by Ranganathan's five laws; and (e) 1970-present is represented by Shera.

Major philosophical notions are expressed by the participants in the mythical dialogue. (a) Ortega y Gasset talks about purity of information as means for screening undesirable books. The author is defending the form of material (book) rather than focusing on the worth of the institutional function. (b) Trezza emphasizes equal opportunity of access to all libraries for anybody who wants it. (c) Licklider focuses on scientific procedure to organize and make material available; the substance does not matter. (d) Lorenz singles out importance of informal education through the library, while (e) Daily sees the importance of the library not in ethics but in science and professionalism. (f) Debons maintains that the primary concerns of librarians ought to be the logistics of managing the information. (g) Kent concentrates on methodology in search for solutions of 'unsolvables' by a study of a transfer coefficient in the information process. (h) Shera argues for optimization of the utility of graphic records of benefit to individuals and through them to the society.

WHITEMAN, P., 1988:

Value is the intrinsic worth or goodness of things, that which renders anything useful. The history of librarianship illustrates respect for books as a physical embodiment of the knowledge and ideas; closely linked to it is the idea of a library as a storage of books. Both, reverence for books and collection building are the two sides of the same coin. For long time librarians did not consider service as a part of their role, presently there is a shift from preservation to the user, considering the library a cultural and educational institution.

The concept of the universality of service, Ranganathan's Second Law (books are for all, or every reader his book) goes back to 1590s when Thomas Bodley believed in full access to a library by bona fide scholars and contemplated opening Oxford library to all students. Recently, Brian Vickery introduced the another law to Ranganathan's Five: No library can stand alone (1964), thus embracing the idea of interlibrary loan, cooperative acquisition and storage.

The issue of general cultural value of the library originated as a part of humanities-based tradition and is currently changing to the issues of management and information system. In the area of social responsibility librarians maintained neutrality in providing requested materials without taking sides. Often neutrality was used as a synonym for playing safe, avoiding challenge of controversial issues. This is changing by accepting responsibility for highlighting social and political issues of the day.

The library recognized inadequacy of focusing predominantly on individuals' needs by concentrating on educational issues of minorities and mass culture. Foskett's 'no politics, no religion, no morals' (1962) stressed that the store need a key; the librarian provides it, but should vanish as an individual person, and become reader's alter ego, immersed in that person's politics, religion and morals. The old values are now under thread from powerful politics of diverse interests of computer, information science, market specialists, mathematicians, and managers. The ultimate aim of information - to inform - become less important, information technology occupying larger part of library school curricula, and library budgets on computers increases, in an overall increased competition for limited resources.

WHITSON, WILLIAM L., 1994:

"Libraries today must adapt to a combination of changes so unprecedented and fundamental that our future is in question. Survival depends on identifying our unique role: what we do that no one else can or will. I believe that the unique role of libraries has always been an economic one: what I call providing subsidized access to shared resources.'" (p.426) The unique, value added role of library is threefold: (1) a provision of access to resources, if necessary at pro rated fees, (2) a user-friendly gateway guiding the user to the relevant resources, and (3) assistance to patrons in finding and using requested information.

WHITTAKER, KENNETH, 1977:

Although libraries began to offer reference and information services in the late nineteenth century, they were not based on any theoretical concepts.

The first real step in the theory formulation was in 1930 when Wyer in the United States examined various attitudes of librarians toward assistance to readers. (p.49)

Between 1930 and the present day, in spite of some progress in other areas of librarianship, the theory of the reference, is still neglected. An outline for such a theory is proposed; it includes nature, purpose and scope of reference service, its terminology and relationship to other subjects.

WHITTEMORE, BRUCE J. and MARSHALL YOVITS, 1973:

Information is defined in terms of decision-making. It incorporates communication level of Shnanon's theory, the technical accuracy, semantical meaning and effectiveness in its impact on the behavior of the recipient of communication.

The components of the model of information theory consist of: (1) information, acquisition and dissemination, (2) decision making, (3) execution, and (4) transformation. The decision-making model is made up of the relationships between action, outcome and goal.

WIEGAND, WAYNE A. 1986:

Although library education went through considerable changes in recent times, "the analytical framework applied here and grounded in the most recent scholarship on the professions suggests that the changes have not been fundamental in nature. Character, expertise, and institutions have shifted with the times, but apparently not the source of authority around which the other three revolve. Curricular modifications have generally followed the dynamics of a changing environment affected by the outside forces like the introduction of new technology and improved methods of administration." (pp. 396-7)

"A century after formal library education began, library science students can be described as college graduates learning the expertise considered necessary to maintain and improve services within an institution housing objects of cultural and intellectual authority." (p. 397)

---- 1989:

The author s hypothesis is that "librarianship has been circumscribed by an ideology of reading that inherently limits its authority in the society in which it operates. Regular adherence to this ideology automatically delegates to others the determination of what is 'good reading'; it also vastly underestimates the mental baggage readers bring to a text that significantly influences the messages they get from it." (p.106)

Library services are satisfactory to some ten percent of American population, but they are very unsatisfactory to the majority of Americans who do not use libraries, because they do not get or expect to get the information services they are looking for.

The author's "hypothesis helps explain why the profession of librarianship lacks the kind of power and authority commanded by other professions . . . [and] why American libraries have generally been considered marginal institutions when compared with other social services provided by the state. Those are two facts of American library history we cannot escape, no matter how rosy we paint our past." (p.107)

WILKINSON, JOHN, 1983:

Librarians are not interested in theory, and consider philosophical generalizations as futile and dangerous, thus failing to delineate professional purposes and responsibilities.

The argument that library survived without philosophy was applicable till 19th century, but is not sufficient in the present times of changing environment.

Bergen, twenty years ago affirmed librarianship to be a separate discipline with its own experiences to gather and analyze data and to develop conceptual schemes.

Librarianship must make the change by becoming a scholarly discipline with a unique focus on relationships between social needs for information and printed knowledge without surrounding its traditional base in literature, ethics or history.

The theoretician should define areas of human experience related to librarianship, legitimating the focus on user-driven system designated to meet cognitive needs.

WILKINSON, MARGARET ANN, 1984:

"'The role of the librarian, unlike that of information scientist, is to identify the 'containers' of information rather than to filter the information itself.' This problem contains three distinct hypotheses. First, the librarian's role is to identify the 'containers' of information. After initial examination of relevant definitions, this hypothesis is found to be true, if not exhaustive. Second, the role of the information scientist is to filter the information itself. Examination of concepts reveal that this statement is also true, although not exhaustive. Finally, exploration of the definitions of the two roles leads to the conclusion that they are philosophically one and the same. Therefore, since the third hypothesis (that the roles are different) is shown to be false, the problem statement is false." (p.195)

WILLIAMS, GORDON, 1964:

"We must recognize and accept the fact that the information needs of everyone - humanist, scientist, and ordinary citizen - are now substantially different from what they were a hundred years or more ago, but that the techniques and organization used by the library to satisfy these needs are not substantially different from what they were then. More important, they are fundamentally inadequate to satisfy the present needs.' (p.378)

"We must accept the proposition that every library is responsible for locating and making available to its patrons any published information they require, a proposition that has not been hitherto acknowledged." (Ibid.)

WILLIAMS, ROBERT V., 1984:

If the purpose of theory is to explain empirical phenomena then there is a completely adequate explanation of the process known as library development. Here theory is defined as "a logical structure of concepts which designates an object to be explained and which provides a mechanism of explanation for that object." (p.1)

Explanation of library development should be measured by the logical interrelatedness and empirical relevance of the concepts that make the explanation.

The need is for a general definition of a library, not limited to socio-cultural conditions, but one that would provide for deriving more limited definitions applicable for specific time and space settings.

There are three major thematic explanations of public library development: (1) social conditions, (2) democratic tradition and (3) social control theory orchestrated by elite to use a library for achieving social control over people.

These attempts are of value in listing some specific variables, the problem however is in the lack of logically interrelated statements explaining why and how the library development takes place at any particular time or space.

Three factors are suggested in explaining the development of special libraries in U.S.A.: (1) transformation of American scholarship, (2) expansion of industry, and (3) development of the library profession. Other indirect factors include: change in American education from text-centered approach to supplementary reading together with an increased focus in universities on research, publications and research ethics.

In general, capitalistic societies established libraries as a social investment, based on Calvinist philosophy of the library as a supplier of intellectual capital, where wealth can be pursued. A non-capitalistic view of the library as a 'temple of knowledge', did not emphasized library development as such.

The overall problem however is in definition and measurement of what is essentially a philosophical concept that activates individuals to emphasize the importance of libraries.

Explanations of library development that emphasizes its state or level, rather than historically oriented analyses, focuses on a particular time using as units of analysis the states, nations, cities or individuals. In this approach the following factors were identified as contributing to library development: the economic ability, geography, education, population size, income, family size, the determination of the potential users of libraries and the ways of information acquisition.

At least three major problems emerge: (1) the constructs were not used in a unified and logical explanatory format; (2) definitions and measurements of the concepts of library development do not represent the entire idea of a library within any type of social system; (3) Library development is of no interest to the library researchers. In our research we are engaged in teleology and not science, by assuming a priori that there are final purposes and causes in library development that is culturally and ideologically determined.

In conclusion, education is the most important construct in library development; it is closely tied to the economic ability, urbanization and the general societal and specific organizational complexity.

WILLIAMS, ROBERT V., and MARTHA JANE K. ZACHERT. 1986:

"The resistance by library education programs to the demands of practitioners for specialization has limited the profession to a very narrow range of work in the 'Information Society' of today and created unnecessary divisions within the information profession at large." (p.215)

In late 1970s a need aroused for "bringing together traditional library education and the new information programs, for reexamining the profession's underlying philosophy, for converging the information professions [and] for developing new types of education to support the whole" (p.230)

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WILLIAMSON, C.C., 1931:

In this first article of the first issue of the Library Quarterly, the author addresses librarianship's claim to the status of science. Lack of satisfactory research in the field, inability to control human behavior, and humanistic background of librarians resulted in an empirical, rule-of-thumb, guesswork driven, library procedures combined with the prejudice against scientific scrutiny. At best, librarianship can be considered an embryonic science only.

"The important thing is training in scientific methods of attacking and solving problems, the cultivation of the scientific spirit and attitude. As soon as this is recognized and acted upon, library science will become a reality." (p.11)

WILLS, MICHAEL, 1989:

In the past librarians were scholars since librarianship was one of the professions offering reasonable means of support. "The duties of the job were few. The qualifications required were virtually identical with those required for scholarship: a knowledge of the contents of books, and the ability to converse about them with others, whose use of the library is thus facilitated." (p.653)

With the changing environment, the roles changed: expanded field of knowledge, requires more time for research and for managing its resources; scholars become teachers and librarians the managers of research material. The argument that to serve best the scholar, one should be a scholar himself is similar to the claim that the physician would be a better doctor by being continually ill; this does not mean that the librarian should spend all his time on scholarship, or that the physician be ill all the time. Librarians' duty is to run libraries and serve their patrons. "If they wish to be scholars, and pursue research, well and good, but they are not thereby being librarians. By serving readers intelligently and effectively, they can greatly facilitate scholarship and research, and help more to be achieved than they could ever achieve themselves." (Ibid.).

WILSON, LOUIS ROUND, 1936:

Three librarians "ascribed the rise of the public library in America to three entirely different causes. Borden, with a penchant for philosophic statement and an outlook that is distinctly social, find that the influences [on librarianship] were largely democratic, educational, and social . . . Wellard, a keen observer from England . . . associated the development of the American public library with the growth of philanthropy and the reform movement . . . Orman . . . sees the American public library springing from an economic demand." (pp. 256-6)

In the next few decades librarians will "set forth systematically in clear perspective the philosophy underlying the activities of Dewey and his coworkers so that the future of librarianship may be able to chart its course in the light of that philosophy. They maintain that American librarians must have a philosophy of librarianship, just as an individual must have a philosophy of life, if he is to make the most of himself. Consequently they are going to find out what this philosophy of the library was. This constitutes the first important change in the field of librarianship which I expect to see take place." (p.256)

---- 1938:

"Although the first free, tax-supported American public library was established approximately a century ago, this philosophy, or spirit, upon which the movement has been based still lacks definitive description. Even on the part of librarians there is disagreement as to what it is. The founders of the American Library Association in 1876 . . . did not concern themselves so much with the formulation and statement of their philosophy as they did with the formulation of specific objectives and with the adoption of concrete measures by means of which these might be achieved." (p. 417)

"Belief in education, and the accompanying desire to bring it within the range of the individual and of the general public, found expression in various ways . . . and they have accentuated the demand for the services of the library as contributing to the promotion of general education and to the preparation of the individual for membership in a democratic society." (p.420)

---- 1953:

The motivation and standards set up by writers such as J.H. Robinson, W.S. Learned, P.Butler and Wellard "contributed to the broadening and deepening of the philosophy of librarianship upon which library service and adult education in America are firmly based. They emphasize the importance and dignity of the individual in a democratic society, an importance and dignity that must be maintained at all cost if men are to remain free. Practical applications of this theory or philosophy have eventuated in a class of publications of great significance to librarians." (p.138)

WILSON, PATRICK, 1973:

In reviewing Shera's concept of social epistemology, the author notes that "the not yet developed foundations [that] Shera hopes for, might neither justify the librarian's claim to perform task of mediating between men and record, nor help in its performance. But perhaps this is not too serious. At one point Shera described the library's role as the assembling, preserving, and making available for use the records of human experience [saying that] 'It's as simple as that' . . . Perhaps, if we forget about maximization of utility, it is indeed as simple as that. But in that case, why worry about 'foundations', and why ask for a new epistemology?" (p.249)

---- 1977:

Public knowledge, available to readers to make their decisions is distinguished from the published knowledge stored in the library. Private ignorance refers to people's indiscriminate use of information; they do not care about the value of information obtained from reading as long as it does not affect negatively their decisions. Public is ill-informed, discouraged by a time-consuming and complex access to knowledge.

Since the major use of knowledge is in a variety of decision-making processes, it requires the assistance of subject experts not the bibliographical experts.

Library catalogs are arranged by known topics not by problems and solutions, retrieved documents may be too difficult to understand and do not assure the correctness of information contained in them. Librarians in general search for information without questioning its value.

Library information dissemination system should be based on subject specialist providing reference assistance and advice.

---- 1983:

The author describes "the bibliographical sector for the assemblage of institutions and organizations that collectively take the output of the publishing industry and try to make it accessible for public use. This sector includes the wholesale and retail book trade, libraries, and various agencies - scholarly, professional and commercial - that produce such bibliographical instruments as abstracting and indexing services, general periodical indexes, list of newly published books and books in print. The job of making the output of the publishing industry accessible has two logically distinct parts: first, making it possible to discover the existence of a publication, and second, making it possible to get . . . a copy of the publication. The first is the problem of intellectual access, the second that of physical access." (p.389)

Bibliographical Research and Development (R&D) work and interest are divided into six categories: (1) improvement of storage, manipulation, transmission and display of bibliographical information, (2) improvement of techniques for creating bibliographical information, (3) descriptive study of literature, the bibliometrics and citation analysis, (4) historical studies of books, libraries, publishing and bibliography, (5) description of the status of bibliographical sector and its social and economic aspects, and (6) studies of the organization and management of the bibliographical sector.

The bibliographical R&D community is a very heterogeneous group, including librarians, information scientists, engineers, and various technicians; the scope of the studies overlaps many disciplines.

---- 1986:

The book discusses reference rules based on either the wants or needs of the inquirer. "Both of these rules are claimed to be equivalent to a rule calling for inquiry into a purpose. The 'purpose rule' is contrasted with a 'face value rule' calling for clarification of initial requests but no explicit inquiry into a purpose. The latter is defended as a legitimate expression of one conception of the reference librarian's professional role, implying a restricted view of the librarian's responsibility for the outcomes of reference inquiries." (p.468)

"Neither rule will suit what one might call, the view that it is the librarian's professional responsibility to pursue inquiries into wants and needs beyond the mere surface interest in information and to plumb unexpressed and even inexpressible wants or needs for anything whatever - reassurance, consolation, relief from worry - insofar as these might be met partially or fully by library materials." (p.474)

All these are procedural questions, which will not be answered until the larger question about the essence of librarianship is resolved.

WILSON, PAULINE 1977:

"The library as a bibliographic system exists to provide access to the graphic records, which is to say recorded information, whether in print or in another recorded form such as film. However, new information services might consist largely of providing access to unrecorded information. This would represent change in the library's function." (p.36)

"Other agencies also store and preserve culture, but in the library that function is carried out primarily by means of a collection. The collection is the base or foundation of every library." (p.37)

---- 1978:

"Two areas of prime importance emerge from a reading of Bell's model. The first is the political environment characteristic of the post-industrial society. It is competitive." (p.128) "For the library this means that careful planning, coordination, and continual attention to legislative programs . . . is required." (Ibid.)

"The second area of importance is the knowledge base of librarianship. If it is to meet the information needs of the post-industrial society, it must be enlarged and enriched . . . [in] theory. technology and management." (Ibid.)

"Information science is not adequately integrated into library education. The library field is seen as inhibiting [its] development." (Ibid.)

---- 1979:

The notion that librarians are teachers is criticized for creating identity problems among librarians. Teachers' primary role is to disseminate knowledge through teaching by interpreting in part the content of graphic records. The librarians' focus is on the understanding of the graphic records structure as entity; they disseminate the content of the records not by teaching but by processing and servicing records of knowledge.

---- 1988:

The author discusses the relationship between library, information science and other disciplines in the context of assumptions made in the past. (1) The library is in information business, but what part of it? (2) Information is like an electrical impulse, but without semantic content. (3) The 'oil-flow' model of information with 'oil-tanks' model of knowledge represent information as a an undifferentiated flow through computer and telecommunication networks; here knowledge is measured in terms of stored fluid information. (4) Machlup made a distinction between the verb 'to inform', the noun 'information - as told' and metaphoric description, analogical to human activities or concoction, assigning the meaning to information for specific purposes. (5) Information is divorced from meaning in engineering sense. (6) It is used in decision leading to action: it must reduce uncertainty, be useful, valuable and correct.

For librarian information is concerned with content, semantic meaning, and its use by people. Information as electrical impulse refers to equipment needed to process it. "The bottom line in libraries is information conceived as having semantic meaning, for without that concept library service would not exist." (p.84)

Do patrons use the library to gain information or acquire knowledge? Information is acquired by being told, a process, a flow of messages as bits and pieces of discrete information. Knowledge is acquired by thinking, a coherent and structured state with enduring value; any experience can lead to change in person's knowledge.

Information science may be: (1) an amorphous, assemblage from different disciplines, (2) a new independent discipline (not yet in existence), (3) combined with computer and/or library science, by managing recorded information in whatever medium it is found.

Library science relates to librarianship, and librarianship is a service. Information science is perceived not as a service or practice but as an area of inquiry.

It is a fallacy to consider the book as merely a container for information, since in addition to reference, it also includes nonfiction, fiction, scholarly, popular, children, or adults content which are more than just containers for information. A book can treat a topic at great length into a coherent whole. It present the author's thoughts in an orderly fashion that make understanding possible.

WILSON, T.D., 1981:

Problems in definitional distinction between data, information, and knowledge are not created by a lack of definitions but by failure to use them at appropriate level and purpose of investigation.

Information in user-studies denotes (a) a physical entity, the channel of communication through which messages are transferred, or (b) factual data, empirically determined and presented in the document or transmitted orally.

Distinction should also be made between facts free of value judgment, advice, and opinion and in the definition of information needs, between wants, or expressed or satisfied demand. All these meanings stress the importance of identifying the context of information studied.

Other confusion is between what is intended by research in information and what is expected from such research. Human needs are of at least 3 interrelated kinds: (1) physiological, (2) affective (psychological, emotional), and (3) cognitive (need to plan, to learn etc.).

The author proposes to substitute the term 'information needs' by 'information-seeking toward the satisfaction of needs.'

Other factors to be included are: the availability of information, its cost, various personal need for achievement, self-expression, self-actualization, interpersonal and environmental barriers to information-seeking, economic climate, political system and physical environment.

Hence, "when we talk of a user' or 'information needs' we should not have in mind some conception of a fundamental, innate, cognitive or emotional 'need' for information, but a conception of information (facts, data, opinion, advice) as one means towards the end of satisfying such fundamental needs." (p.10)

The holistic approach to information studies perceives an individual not only as seeking information for cognitive ends, but as a living and working person in social setting, with its own motivations. This results in a shift of attention of research from information sources and systems used by the information-seeker to an exploration of the role of information in the user's social setting. This affect: (1) methods used in research, leading to a qualitative research concerned with the developing concepts rather than applying preexisting concepts; (2) the context of the research is narrowed before developing generally applicable theory, and (3) conceptual perspective is widened by including relevant studies in psychology, social psychology, or sociology, using models from social rather than natural sciences.

The result will be (1) a reduction of the marginality of information services in the organization (the service will become more essential); (2) increased analysis of the total range of information services in an organization; (3) widening of the concept of 'information profession' by (a) including computer scientists, system analysts, information managers, designers and database entrepreneurs, and (b) by developing better cooperation among those groups; and (4) expanding curricula to be more concerned with the social and organizational contexts of information-seeking and information use, with more emphasis on theories in communication, social research methods and their philosophical bases.

---- 1984:

"The cognitive approach to 'information behaviour' centres upon the idea of meaning. Meaning is involved not only in all aspects of information generation, transfer and use, but also in the way people define themselves, their lives and their action.

The cognitive approach . . . draws attention to the need for a bridge between the meaning of everyday life and the information that may have relevance for everyday life . . . everyday life is different for every person.

"Individuals may be constrained . . . in their ability to define the content, direction and function of their work and . . . the diversity of roles may prevent the emergence of coherent groups capable of expressing clear needs for information support." (p.197) Those factors may seriously affect the study of the behavior in the use of information.

WINGER, HOWARD W., 1961:

"The specialization in librarianship should not hide the common role of the librarian. When we speak of the academic librarian and the public librarian, the common and critical word, after all, is just the librarian. In its historical context, the role of the librarian has developed on the approach to knowledge. The librarian's task has been to collect and organize the important records of the time in order to bring them to bear in all possible ways on the intellectual problems of time. Conditioning factors in his task have been the range and complexity of records that were valued by a scholarship and a culture and the size and the definition of the audience. The variations in these factors and the personal emphasis librarians have placed on them account for historical changes in librarianship and for the proliferating specialization of today." (p.333)

WINTER, MICHAEL F., 1988:

This is a study in sociology of librarianship as a profession, focusing on historical context and types of professional controls. The author calls for a 'metascience', whose subject would be the organization of knowledge itself.

General social functions of librarianship are: (a) maintenance of culture by making available access to knowledge records, (b) provision of cultural continuity by preserving cultural and historical records, and (c) expansion of the collective social memory.

'Knowledge base' is defined as an intellectual capital of a profession, a specialized professional knowledge. Metascience is seen as a need for organization of records. Library knowledge base is applied metascience: how the universe of published records of knowledge is organized.

Metascience developed as a result of a rapid growth of knowledge and increased intellectual confusion. New disciplines focus on form rather than content in providing structure. Three approaches to metascience are: (1) Structuralism (Claude Lewis Strauss), (2) Semiotics (Unberto Eco), and (3) Systems theory (Laszlo).

The core of librarianship is three-part interplay between: (a) organizational structure of knowledge, (b) study of users and patterns of information use, and (c) theory of intellectual freedom.

Library organization of knowledge consists of organization of its records outputs by: (a) classification: cognitive, similar to Linnean classification, periodic tables and F. Beconian outline of knowledge, (b) storing and retrieval: an indexing system; and (c) specialized by subject. The library mediates between them.

"Mediation among records and users requires, in addition to communication, the ability to abstract the formal properties of documents from their contents." (p.86) "The interpretation of the content of the record is secondary to the organization of bodies of records by formal characteristics." (Ibid.)

WOODSWORTH, ANNE, et al., 1989:

The theme of this study is the increased diversity among research libraries with few large collections and many others focusing on electronic access.

Mission of research library is to provide free flow of information-based services, integrated into the research, teaching and administrative functions of the university, with library assuming the central role in formulating university policies.

Proposed conceptual model consists of interconnected tripartite system of (1) information handling, (2) designing access systems and (3) evaluation of user needs, delivering services and programs.

Each component is characterized by its own (1) focus (handling, designing, service), (2) functions (acquisition, organization, preservation, design and evaluation of programs), (3) resources (collection, files, people), (4) staffing (centralized and dispersed), (5) skills (preservation techniques, use of artificial intelligence, subject orientation), and (6) results (objects are organized, access is user-sensitive, and user needs are met).

Staff involved in information handling and design is centralized, those in delivering and evaluating programs and services are dispersed in 'service clusters', close to their user group. User services are proactive with fast delivery, and databases are created, delivered, and evaluated.

Collections are measured not by size but the ability to provide access in all formats, whole-text, and in-depth access to not-in- machine formats.

"Boundary conditions and transitional steps will alter research libraries radically by the year 2020. Functions, organization, administration, staffing, results, and the library's centrality on campus will be altered, with service clusters formed and disbanded to meet the needs of client groups. Flexibility, collaboration, diversity, and fluidity will characterize research library operation and service." (p.132)

WOODWARD, DIANA, 1987:

This is a summary of panel discussion about fundamental philosophical issues on the nature of information science.

A. Metaphysical issues in classification theory. (David V. Ward): "Those issues are of two sorts: (1) metaphysical questions about the nature of the objects classified, and; (2) epistemological questions about the definitions of the concepts which denote the classified objects." (p.255)

Major metaphysical questions include the definitions by nominalists and pragmatists of the status of universals such as the status of the objects as real or fiction.

Epistemological questions address the descriptive, assertive or imperative prescriptive nature of definitions in the theories of classification.

B. Social epistemology and the Foundations of Information Science (Thomas J. Froehlich).

Cartesian interpretation of relevance based on the subjective states of the information users, is criticized "since it radically misconstrues the social embeddedness of relevance judgments and the appropriation of culture by the 'phenomenal body', a phenomenological constructs that avoid dualism and which supplies the foundation for a social epistemology that discloses the transpersonal and intersubjective dimension of relevance and cognitive authority judgments. In order to grasp effectively the information transfer process in society, we must analyze such concepts as epistemic and axiological communities, two foci of a social epistemology and a hermeneutic approach to information transfer structure." (T.J. Froehlich, Ibid.)

---- 1988:

Underlying philosophy of the school's curriculum is that: (a) student interested in any aspects of information will benefit from exposure to the foundation courses; (b) students need an understanding of both information users and technology that include theories of individual and organizational behavior, information theory and methods for satisfying user needs, and (c) students must have both theoretical understanding of the field and applied experience with methods of implementation (online searching, database design, systems analysis and information ethics).

WOOSTER, HAROLD A., 1955:

The author warns against the use of the concept 'perfection' since it implies a status quo. The perfection is beyond any criticism and above any controversy, lacking humility and provides no opportunity for improvement (any change can be only worse).

The library as "the institution in theory and practice is not perfect, its basic ideal of lifetime educational opportunities freely available is a most noble concept . . . yet it seldom, if ever, approaches perfection." (p.159)

WORSLEY PETER, 1967:

The author notes a change from 19th century laissez-faire approach for self-advancement to contemporary emergence of large organizations providing education to all.

Public library shares its participation with other media. It's mission is multipurposeful: it helps in finding books, provides civic publicity, information and recreation, reflecting people's total social and cultural environment.

However libraries have hurdles to overcome: patrons are at times considered a nuisance, they lack understanding of cultural barriers and the use of abstract language.

"Some people believe that the library tends to attract its reader toward higher quality literature, and to widen his interest. Others hold that he finds what he wants to find, and that using the library only helps him confirm his existing prejudices." (p.267)

The answer is to become a center for cultural activities, disregarding 'high' and 'low' cultural distinction. It is the treatment of a theme, and handling of the form, not the form itself that matter.

WRIGHT, HERBERT CURTIS, 1975:

There is a need "to create a critical Studienswissenchaft, a kind of 'studyology' . . . a discipline that has for its object the study of anything, a science of the study of subject X.

Librarians should invent logology, a general science of disciplinary knowing, that could become, for example, an 'anthropologology', an ology capable of explaining exactly what antropology is . . . by focusing squarely on its uses of information. If we knew with precision why anthropologists require the stuff they read and write and how they think about it, we could construct a meaningful librarianship for them that would be responsive to their actual information needs." (p.29)

---- 1976a:

The original sin of Dewey was his trying "to create a professional education based on the physics of library operations." (p.27)

"There is a great deal of difference between the physics of library operations and the metaphysics of librarianship. Metaphysics is the philosophical attempt to understand the ultimate realities . . . whereas physics is the scientific investigation of its proximate realities." (p.28)

"The basic metaphysical question for librarians [is] 'What really is librarianship?' or better, 'What is the actual substance of librarianship ultimately made of?" (p.29) "If we belief that the ultimate substance of librarianship is ideas, we are idealists . . . if we belief that librarianship is ultimately made of matter, we become materialists." (Ibid.)

"According to Kaplan, the metasciences, including librarianship, are derived not from man and nature in any objective sense, but from human ideas, the human language . . . and the human information processes." (p.32)

---- 1976b:

"The entire information science movement is misconceived, since information is noetic form; and form precisely qua form cannot be the proper object of a science, which must have a physical referent (phenomenal base) in the material universe.

Physical substance is the direct object of study in the sciences; but in the arts it is the means of studying form. Information in the humanities, for example, tends to be its own end. Art has great meaning for human beings; but it does not refer to anything outside itself; it is what it means, and its meaning cannot be looked up in the dictionary or anywhere else.

The humanistic recognition of nonphysical structure and form can hardly be equated with the scientific description of physical substance and content. The expressive vehicle of information, on the other hand, can be studied scientifically; and that seems to be what the information scientists are actually studying." (p. 310)

---- 1976c:

There are no general theories of learning or of teaching, since psychologists have failed to demonstrate any connections between abstract knowledge and its practical applications; knowing how to teach does not depend on knowing learning processes.

There are two standards of truth: the conceptual (abstract standards) and the experimental (true in terms of human experience but not necessarily experimental).

Scientific models imply that everything is based on natural order, or is clarified mathematically. Human expression that is always specific and concrete escapes intellectual abstractions.

Psychology studies human body, not human psyche: e.g., forms of thought are subject to epistemological studies, while the actual thinking is studies as human behavior. This leads to a distinction between the ultimate forms of human expression and human expressive behavior.

Teaching is an art, and there is no science of art. (e.g., It involves emotions that cannot be systematically appraised). Art deals with know-how, science deals with basic theoretical knowledge, devising novel ways of thinking about familiar phenomena.

---- 1977a:

Wright "argues that information per se can function as the humanistic referent for a deeply philosophical study, but cannot possibly constitute the object of science . . . A philosophy of librarianship may possibly exist somewhere, but if it does, we have been unable to locate even the slightest trace of it . . . there is not one single philosopher-librarian anywhere in America today." (pp.xix-xv)

Information cannot be the proper object of a science for two reasons: (1) information is a nonphysical phenomenon made up of entirely spiritual structure and form, not of material substance and content; and (2) form, precisely qua form, cannot function as the direct object of a science, which must have a physical referent (phenomenal base) in the material universe" (Ibid.)

Wright refers to Kaplan's inclusion of librarianship in the metascience, arguing that "the only alternative to a structural base for any of the metasciences would be according to Kaplan ' a narrow specialism or a really quite impossible encyclopedism' [meaning] not that librarians are humanistic by choice, but that the direct object of their interest is the noetic form of the human mind itself." (p.9)

"The nature of man and information are probably the same thing, just as librarianship and philosophy may turn out to be, not merely similar, but identical." (p.11)

---- 1977b:

"Librarianship and science are antithetical as knowledge systems, because the substance of the former is instrumental to the latter and vice versa. This is revealed by the diametric oppositions of (a) their objects and methods of study, and (b) their objects and methods of mastery. The resulting differences between them may be summarized as follows: (1) The object of study in science is matter; in librarianship it is its form. (2) The method of study is empirical in science; in librarianship it is rational. (3) The object of mastery is the physics of experience in science; in librarianship it is the metaphysics of thoughts. (4) The means of mastery is formal in science; in librarianship it is material." (p.67)

---- 1978a:

"There is no possibility of ever creating science (physical concepts) of information (metaphysical subsistences) because science can say nothing whatever positive, neutral or negative -

about metaphysical questions. Librarianship, which may be described as the management of human intellection, is a metaphysical technology of knowing based on philosophy (knowledge of subsistences); it is not a physical technology of action based on science (knowledge of existents). Librarianship, in other words, is the very antithesis of science as a knowledge system." (p.261)

---- 1978b:

Wright "(1) interprets books and libraries instrumentally as informational implements, not substantively as indispensable to librarianship; (2) regards specific library operations as the concrete instances of librarianship, which is itself an abstract concept; (3) rejects the current perception of librarianship as a grocery list of instances for which there is no concept; and (4) presumes a conceptual understanding of librarianship as the artificial preservation of information for reuse by human beings, regardless of the means employed for its accomplishment." (pp. 389-90)

"(1) The human mind is the common source and subject matter of both librarianship and philosophy; but librarianship is not derived from philosophy, or vice versa. (2) A defensible philosophy of librarianship must be based, not on the physics of library practice or on some classical sources, but on the metaphysical realities of librarianship itself. (3) Plato is the supreme philosophical advocate of Athenian immaterialism, which studies the objective and subjective aspects of ideas, but he is neither the source nor the champion of either the bookless or bookish aspects of Greek librarianship." (p.396)

---- 1979:

Last century's reasoning was instrumental and utilitarian. It was originally formulated by Francis Bacon as a scientific doctrine that knowledge is instrumental. Bentham extended instrumentality into law of society; today knowledge is instrumental in science.

Librarians fail to distinguish between the library's substance from its instruments, between physical datum and metaphysical referent (ideas). "The study of physical realities, in which knowing is instrumental to experience is . . . (not) distinguished from the study of ideas, in which experience is instrumental to knowing and to communicating what is known." (p.29)

"The metaphysical referent constitutes the difference between the physical datum-as-symbol and the physical datum per se."(p.30) "The symbolic datum . . . always refers the mind to an idea. Relating one physical datum to another is a scientific problem; but science cannot manage metaphysical referents, which are related to physical data only by convention, not by nature." (Ibid.)

"The metaphysical interplay . . . mediates all forms of communication both to and from intellect, whether the messages communicated are behavioral, cultural, mathematical, verbal, or whatever." (Ibid.)

"The problem of relating meanings to data is metaphysical, not scientific. The mind . . . interprets the symbolic datum extrinsically, in terms of its referents; but science can only interpret it intrinsically, in terms of its own nature." (p.31)

"The physics of sensation constitutes the necessary conditions for human communications . . . but the sufficient condition can be met only in the mind's metaphysical recognition of the ideas symbolized by sensation." (Ibid.)

Librarianship is "an invisible science of the mind and its ideas . . . data processing (by machines) should not be confused with the processing of information (by human mind). Information science is presently data science, not idea science." (p.32)

---- 1981a:

Anthropological model is most sophisticated among social sciences. It covers realities dealt with, ways of thinking about them, and best ways of performing its professional functions.

It founded a formula for creating the critical philosophy of the discipline by spelling out its metaphysics, epistemology and ethics.

It distinguished between culture and society. (a) The cultural idealists identify culture with cognition and individual's knowledge controls his personal and social behavior. Culture is considered not a material phenomenon but a form of things that people have in mind, it is their model of perceiving, relating and interpreting. (b) The cultural materialists on the other hand, accept behavioral concept of culture, and focus on observable patterns of behavior.

The controversy relates to the question whether culture should be understood from the perspective of the society, or society from that of culture; a dualism of culture considered as knowledge and as behavior, of reason and senses, of form and matter - all coming together in a person, who is both a thinker who knows things,' and ' a behaver who does things.

Librarianship should be concerned with the formal realities of the ideational order, not with the physical realities of the statistical order.

---- 1981b:

This is a revised version of Wright's 1879 essay. These notes refer to the added section only.

Librarianship has emerged from humanistic tradition, its focus is on the communication of ideas, not on transmission of signals. Contemporary librarianship accepts system theory, the scientific way of accounting for human communications, overlooking symbolic interactionism, and a humanistic approach to communication.

General system theory, cybernetics, and information theory are all part of Bertalanffy's system theory. The Society for General System was not intended for formal disciplines like history or philosophy, but it is a logico-mathematical system applicable to empirical disciplines. Cybernetics addresses control of physical behavior of biological, social and mechanical systems. Information science is not concerned with information but with transfer of symbols. and concentrates on the design, production, implementation and control of the electronic system.

"Information as the invisible structure of thought suddenly became information as the observable functions of matter- . energy," (p.4) reducing the study of the mind to action theory, in which a thought becomes a process.

---- 1982a:

Wright discusses Alfred N.Whitehead's criticism of science, by pointing to its limitations. Economics, psychology, sociology and education are not sciences but knowledges that apply methods of natural sciences to realities and investigations outside the scope of natural sciences. These methods are often intolerant, limited to definite groups of abstractions. overemphasizing some issues such as the struggle for survival. Thus humanities have been dehumanized by science, stressing things rather than values, technology over moral restrains, and turning thinking into manipulative process.

Librarianship is based not on action theory but on the knowledge about human life. Montesquieu, who attempted to create science of society, objected to equating social realities with physical. This view was ignored, and instead Durkheim's claim was supported, stating "that the laws of society are no different from those governing the rest of nature and that the method by which they are discovered is identical with that of the other sciences." (p.16)

This lead to the establishment of empiricism in modern times, recreating the monistic fiction of ancient materialism. The problem of relating the material world perceived by senses to the world of form of abstract thoughts has not been resolved.

Philosophers agree only on the method of science as an effective approach in obtaining knowledge about the material aspects of reality, the subject-matter of science in which the science uses ideas as instrumental factors only.

---- 1982b:

Philosophy of librarianship should start with the formulation of metaphysical beliefs about the realities they deal with, before considering the derivative problems of thinking (epistemology) or acting (ethics) in relation to these realities.

In metaphysics primary realities relate to information, distinguishing between ideas (formal), data (physical world), factual knowledge about data (from physical world) and formal knowledge about ideas.

There are two alternative epistemological explanations of how the realities are known: (a) empirical, materialistic view transfers the ideas from nonphysical to the physical world by endowing them with content and substance that they do not possess (hypostatic fallacy), or (b) rational view of ultimate realities considered as ideas based on introspective interpretation of data, as instruments of communication, and not as objects of empirical study.

Ethical professional function of a librarian is to orient a patron to whatever knowledge is available for study (as opposed to managerial function of managing these resources). Pragmatism should be rejected by librarians for two reasons: (a) it is an experimentally biased philosophy of action derived from scientific materialism, and (b) theories of knowledge cannot be reduced to action theories.

What is needed is an intellectual interface between the intellectual structure of knowledge and the librarian's technology of intellectual access to knowledge.

Librarianship is totally interdisciplinary, it is not a subject matter but a way of relating to subject matters. It offers a comprehensive synthesis of knowledge, of interrelated ideas.

Potential research in librarianship includes (a) applied research into problems in library practice, and (b) basic research into librarianship as a field of study addressing the entire geography of knowledge, the role of symbols in communication and the nature of critical inquiry in general.

---- 1984a:

Western though began as matter-philosophy in Ionia ending with Socrates, the founder of humanism. Since then, the two philosophies compete with each other. Materialists overpowered the formalists in the 17th century's scientific revolution, with intellectuals retaining dual concern for (a) nature of the universe, and (b) nature of the man.

Kaplan essay identified humanism as a foundation for librarianship and correlated librarianship with metascience, by distinguishing between (1) formal abstractions of information (ideas existing as intellectual product of mind in a nonphysical environment), and (2) the physical manifestation of information (symbolic data by which immaterial ideas are expressed and communicated in the material world).

Information considered as an empirical data refers to matter-philosophy (as nonsymbolic realities within physical environment). If it is defined as ideas, then it belongs to form-philosophy (information conceived as symbolic realities in cultural environment).

Thus, the physical symbol and its ideative referent constitute the basic elements of symbolism. But symbol and referent, by belonging to different orders of reality, created different theoretical orientations to the study of information.

There is a need for a communication theory that would integrate the two realities, a psychophysical theory explaining complex interactions with both of these environments.

Intellectual discipline that creates knowledge of intellectual, unobserved realities, can only be understood by comparing and contrasting it with the empirical disciplines that produce empirical and observable knowledge.

Librarians confused knowledge about phenomena (intellectual knowledge of physical realities required by science), with knowledge about knowledge (knowledge of intellectual realities required by librarian). Librarianship is concerned about subjective reports about realities, both empirical and intellectual.

Librarians require an instrumental knowledge of human behavior as means of dealing with information, but do not require scientific knowledge of the behavior per se. Kaplan sees information as ideas struggling to understand how human brings ideas into existence, and how they communicate and interpret them.

Thus librarianship emerged from humanistic tradition, its fundamental concern is with the communication of ideas. Its foundation is intellectual and not observational and it is classified with the metasciences (intellectual disciplines studying mentation itself rather than merely using it to study something else).

"Kaplan's placement of librarianship among the metasciences is sound because he correctly identifies its realities as formal and classifies them with the similar realities of its fellow disciplines, which all are derived from form-philosophy." (p.26)

---- 1984b:

Jessee Shera's establishment of the first documentation center in a library school has been widely interpreted as his greatest contribution to librarianship. It may have been his greatest folly, however, because information science has subsequently flooded the library profession with tensions and confusion by (1) emphasizing the technical aspects of communication systems and (2) by ignoring the human aspects of communication per se.

Shera criticized information science for its takeover mentality insisting that it must not be allowed to rule the library roots, and for its failure to distinguish between data systems (the transmission and reception of signals) and idea systems (the intersubjective communication of thoughts). He

Shera recommended Symbolic Interactionism as an alternative to Systems Theory, because the former attempts to explain how a mind is put in touch with other minds through communication of ideas, whereas the latter concentrates on the controlled manipulation of physical data such as electrical impulses, alphabetic characters, and speech sounds.

---- 1985a:

Metascience originally included formal disciplines of science only, but extends to other metasciences, eventually encompassing linguistics, semantics, literature, philosophy and history.

The term was coined by O. Wisdom as a name for the study of scientific inference; philosophical study of scientific knowledge must be distinguished from the scientific study of phenomena. Knowing about knowledge is not the subject of science but of psychology, sociology, history, philosophy and librarianship.

Thus metascience is concerned about logical epistemological and ontological aspects of science, it does not add to our knowledge of the world but it does inform the intellectual faculties about abstract understanding and practical judgment by ordering the knowledge we already have.

The following are the main characteristics of human inference. (1) The formal object of study is always an abstract inference, it has no physical reality. (2) Rationality is the only criterion of truth; validity of mathematical statements is determined solely by the coherence theory of truth, while the correspondence theory of truth combines the sufficient condition of empirical observability with the necessary conditions of rational consistency in order to produce valid, factual statements. (3) Formal knowledge stems from the study of formal, not factual objects: (a) it is logically rational, while knowledge of facts is probabilistic and empirical, (b) it consists of verbal and mathematical concepts, objective and subjective judgments and purposive reason, (c) it begins, proceeds and ends with ideas, (d) it is deductive, demonstrative and conclusive (not inductive, conjectural and tentative), and (e) unlike factual knowledge, it agrees exactly with its objects.

It is only because the metascience is broadened (as the inclusive study of human general inferences) that it can apply to librarianship. According to Shera librarianship is rooted in epistemology (knowledge about knowledge itself), it is a management of human knowledge, the most disciplinary discipline and most philosophical of all professions. (pp. 17-18)

---- 1985b:

Popper's three world hypotheses state that knowledge is communicated through physical resources of World 1 and as symbols relating mind to ideas in Worlds 2 and 3.

This physical symbols-ideative referents interaction is the only access to private knowledge of individuals. In this sense, the interrelationships between recorded knowledge and its interpreters constitute the bases for philosophy of librarianship, allowing for relating abstract knowledge through physical carriers of recorded knowledge to library patrons.

---- 1986:

Librarianship is involved in communication of knowledge based on relationship between physical symbols and ideative referents. This is a major philosophical issue in librarianship and library education, requiring that the philosophy of librarianship be dualistic, psychophysical and interactive.

The struggle in philosophy between physical and formal, spiritual worlds is everlasting. (1) Greek philosophy started with Ionian materialists avoidance of dualism by assuming perfect unity of matter and life. (2) Pythagoreans assumed twofold reality (scientific formalism defining all existence in terms of time-space). (3) Philosophers at Ela discovered dualism in hylozoism (matter is different from life, since matter cannot be simultaneously constant and variant). (4) Parmenides and the Eleatics developed extreme rationalism based on permanence of Being (everything else is unreal). (5) Heraclitus represented sensualist position (all is Being, everything but change is illusion). (6) Leucippus and Democritus combined Being and Becoming into an atomic model of matter; physical atoms are moving freely in space, but their combinations were never the same, but quantitatively distinct. (7) Pre-Socratic Greeks philosophers rescued Greeks from Oriental mysticism by: (a) focusing on the cosmos, and (b) making logical and ontological distinction between order and disorder. (8) Socrates introduced anthropocentric attitude to life, expressed by humanism calling for introspection (know thyself). (9) Plato systematized the form-philosophy. (10) Democritus focused on matter philosophy. (11) Both, philosophies of Plato and Democritus were synthesized by Aristotle's ontological dualism of the scientific and humanistic outlook. (12) Medawar introduced the Law of the Conservation of Information: no process of logical reasoning or computer programmable operation can enlarge the information content of axioms, premises or observations from which it proceeds. (13) Kaplan distinguished between formal abstractions of information and physical manifestations of information pointing to ontological difference between metaphysical nature of ideas and their physical manifestations. (14) Mead created the concept of symbolic interactionism, combining empirical and ideative social orders through psychophysical interaction by relating physical symbols to their symbolic referents. (Mead a pragmatist rejected Plato's dualism.) (15) Popper follows Plato by transcending the dualism through the third world of forms and ideas. (16) Shera stated that librarianship is rooted in epistemology (knowledge about knowledge itself), and librarians are the managers of human knowledge, based on formal not physical structure.

---- 1988:

This pamphlet is an extension of 's previous essay (1984a), it contains a comprehensive chronological bibliography of Shera, a review of his writings, and references to 's discussions with Shera on various intellectual aspects of librarianship.

He describes Shera as a very influential writer on library philosophy, a futurist, an educator and commentator. The major components of his philosophy were communication and application of technology to librarianship. He advocated a holistic unity of librarianship, documentation, special librarianship, information retrieval and information science, based on psychophysical unity that consists of immaterial realities (ideas) and physical instruments (data).

Shera maintained that the proper foundation of the theory of librarianship is 'symbolic interactionism' investigating psychophysical interaction of the empirical and the ideative orders in human beings by studying the relationships between the physical symbol and its symbolic referent.

The social purpose of librarianship is to bring together human mind and graphic records. Administration, management, and architecture can contribute to library effectiveness, but they are not librarianship.

Among major issues discussed by Shera was the relationship between library and information sciences. He was instrumental in the emergence of information science in the 1950's, becoming its critic later on. He began questioning information science, as an approach resting purely on technological foundations that cannot qualify as a theoretical base for librarianship, whether called bibliometrics or informatics. Librarianship is a service while information science is an area of inquiry that seeks to measure and improve efficiency of the librarian. Both are concerned with transfer.

Librarianship is a trinity of acquisition, organization and knowledge service; information science contributes to librarianship only in matters of organization, by arranging and processing its accumulated material for the maximum convenience and efficiency of use.

WRIGHT, WALTER W., 1955:

The creed of librarians service is defined in terms of (a) attitude of library staff toward their job, patrons and colleagues, (b) accuracy of library processing technology and effectiveness of its services, and (c) awareness of library mission to bring together books and readers, in the environment of service for an individual patron's informational needs.

- Y -

YNGVE, VICTOR, H., 1981:

The author discusses the relationships between words, thoughts and things, and he questions the adequacy of the theories about 'ambiguity.'

He proposes his own model of communication, called 'human linguistics', which focuses on the importance of a dialogue between the librarian and the patron, leading to a negotiated answer to the patron's questions.

The major components of the model are: (a) awareness of linguistic ambiguity, (b) linkage between individual and group in communication, (c) understanding of an inquirer's and reference librarian's background relevant to the reference inquiry, (d) mutual dependence on knowing each other, and (e) improved dialogue and negotiating interview techniques.

YOUNG, PAUL, 1987:

Young defines information in terms of mass-energy, by unifying mind-matter distinction and considering the whole universe as one mass-energy system.

Information is seen as the form, a flow of energy, and a force changing form. All mental events such as knowledge, emotions, volitions, consciousness and mind are viewed as abstract information events, and as flows of mass-energy forms.

Mind and knowledge are seen as mass-energy form manipulating processes. Universe. is a total mass-energy system that exercises its creative, control and communicative functions by manipulating forms of itself (e.g., structures, patterns, or arrangements). We visualize ourselves as forms of self-organizing, self-regulating, mass-energy the universe.

YOUNG, T.R., 1987:

Toffler (1980) argues that political transformation of society is not necessary since the new computer technology will lead to the Third Wave Society of local control and broadened democracy without social revolution.

The criticism of that position rest on two basic assumptions: (1) any knowledge process. mediated by an existing social structure will tend to reproduce that structure, (2) knowledge process is selectively biased in favor of race or power, transforming theory into ideology, i.e.. technological innovations have no social meaning for change, progress or regression in and of themselves, that meaning arises from their use.

Information is (1) a relationship between two or more code -using systems, (2) a process by which structure in one code -using system is produced in another code-using system, (3) only code-using systems that share structure can reorganize (inform) themselves to share still more structure, (4) information is not an exchange, but creative process.

Information requires at least two code-users. It is defined as "a process by which two or more code-using systems assign meaning to discernibly different states of physical phenomena (sound, electromagnetic waves, light or such) and create knowledge about things not previously known." (p.122) Where no structure is shared, information cannot be created.

It is Toffler's sin, to depoliticize change process, by setting falsely technology as an agent of social change, when people in fact develop and deploy that technology. It is an error to assume that in depoliticized system processed through social class, power can be neutral.

Toffler maintains that industrialism is being replaced by information producing super-industrial society, a global village; all implemented by the role of a personal computer that will demassify media, make all information immediately available, custom-designed, deemphasizing profit, decentralizing politics, and eliminating poverty.

His vision leaves out all political and economic realities, structure of power, privilege and inequality. It is fiction, an ideology. The most significant theoretical point overlooked by Toffler is that information technology, mediated by the structure of class or party power, will reproduce that power and increase the concentration of wealth. Information technology must be organized as communications technology. Exclusion of persons from communication excludes them from the process by which human culture is produced.

ZURKOWSKI, PAUL G., 1981:

Library context was created by the Medici library, which gathered many manufactured books in one place. It was preceded by the printers of books, who created a business services for profit.

The information context grown through the generation of technological development: (1) ink print information, (2) computer-composed compilations, (3) machine-readable files, (4) timeshare access to data bases through a telephone, (5) the full text search, and (6) two-way interactive cable services.

New ethics involves the issues of privacy, property rights, intellectual freedom and enhanced human skills.

"In the new information context, the potential role of librarians is expanding just as those stores of knowledge are escaping from your shelves." (p.1383)

The transition from the library to information context becomes a new base for librarians, requiring the development of a balance between traditional service mentality and the entrepreneurial mode of operation.

ZWASS, VLADIMIR, 1983:

This is a study of manipulation of symbolic information by synthetic processors (computers). It aims not only at external knowledge but primary at artificial phenomena, combining theoretical investigations with empirical findings. It is one of the fields where external social needs influence many developmental directions; it does not follow Platonic ideal of a disinterested search for knowledge.

Information science is considered by many as a metascience developing fundamental theories of information phenomena. Machlup defined information as a study of processes and systems of knolwedge-transfer, including a computer. However computers not only accelerate cognitive processes but also augment them. Computer science overlaps with information science in artificial processing of information, and in the processing information transfer.

Computer science is also related to sciences that: (1) provide conceptual models (cybernetics, systems theory, information theory), (2) share with computer areas of inquiry (socioeconomics, cognitive psychology), (3) shares methods of inquiry (mathematics), and (4) is influenced by computer's state of art and in turn influences practically all sciences.

## APPENDIX A:
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See:K.McGarry, 1987;G.A.Miller, 1983a;

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